

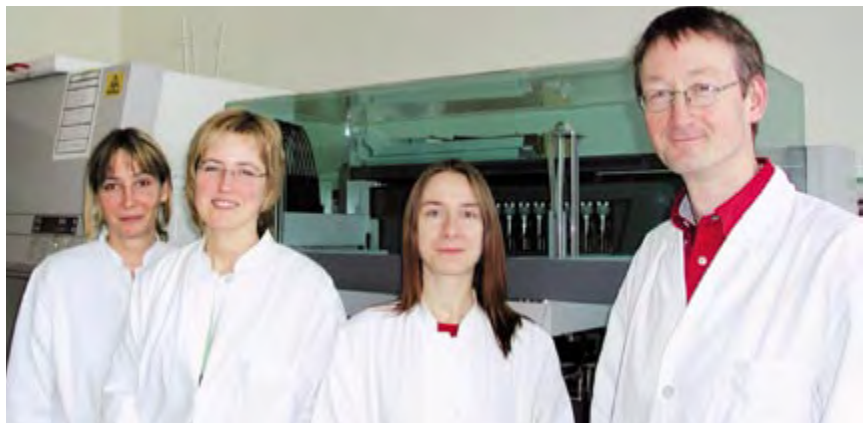
# Automated virus testing in animals

Scientists at the Staatliches Veterinäruntersuchungsamt (National Veterinary Laboratory) Arnsberg in Germany, responsible for veterinary diagnoses, have chosen Tecan's Freedom EVO® workstation for the rapid detection of viruses which cause potentially devastating diseases. The workstation is already being used to detect the virus responsible for a recent outbreak of bluetongue disease in cattle, and will soon be used for the detection of the avian influenza virus in local bird populations.

The Staatliches Veterinäruntersuchungsamt is a government institution in the administrative district of Arnsberg, North Rhine-Westphalia, with departments for pathology, serology, virology and molecular biology for the diagnosis of animal diseases. It also investigates food and feed quality, and performs the detection of pathogens in foodstuff. Within the organization, the molecular biology department exists as a service laboratory to the other departments by performing molecular testing for various diseases.

Dr Jochen Kilwinski of the molecular biology department explained: "Since September we have been detecting bluetongue virus RNA in samples from cattle using Tecan instrumentation, working in parallel with the serology department which is detecting antibodies to bluetongue virus in the same samples. Bluetongue is an insect-borne disease, primarily of sheep, and there is currently no effective treatment. It is normally rare in cattle, however, an outbreak in the Netherlands in August 2006, then spread to the North Rhine-Westphalia region in autumn. Very interestingly, the virus detected in this outbreak belongs to serotype 8, which normally only occurs in the south of the Sahara, India, Pakistan, or in central and South America. Furthermore, serotype 8 is transmitted by biting midge species of the genus *Culicoides*, which are not found in our latitudes."

"We are using a Freedom EVO 150 to isolate and purify RNA from blood samples, to detect the specific RNA



From left to right: Yvonne Kullman, Beatrix Hanstein, Daniela Reckling and Jochen Kilwinski

segment of the bluetongue virus serotype 8 by reverse transcription and real-time PCR. We obtained the detection protocol from the Friedrich-Loeffler Institute in Insel Riems, the National Reference Laboratory, which is also equipped with a Tecan instrument. Our Freedom EVO is working with the Te-VacS™ vacuum manifold, with a 96-well format to handle a large throughput of samples."

Dr Kilwinski is delighted with the results he has been getting from the Freedom EVO. "During initial testing, there was 100% agreement between the preparations made by the Freedom EVO and our manual preparations. Furthermore, the automated preparation was shown to be in good accordance with the handmade preparations while participating in a national bluetongue virus ring trial. We have a lot of experience with manual handling, so this gave us complete confidence in Tecan's automated system. The performance of the Freedom EVO is excellent with no reliability problems, and we would

not have been able to handle our current throughput manually. We are very happy to have this instrument. I strongly feel that other institutions should also have the opportunity to carry out their investigations with a workstation like this."

With the flexibility of the Freedom EVO, Dr Kilwinski's workstation is not restricted to bluetongue virus detection. "We are also responsible for the detection of avian influenza in wild bird populations within the administrative district of Arnsberg. The protocol for the detection of the avian influenza virus has already been implemented on the Freedom EVO, and it is very easy to switch from testing for bluetongue virus to avian flu. We are now waiting for spring, when the migration of birds starts again, and we are ready to use the workstation to test for avian flu in local bird populations, should the need arise."