

A (cyto)genetic revelation

Specialist laboratories engaged in molecular genetics and cytogenetics are turning to automation to cope with ever-increasing sample numbers, implementing tailored solutions designed to handle a range of materials and meet specific testing needs.



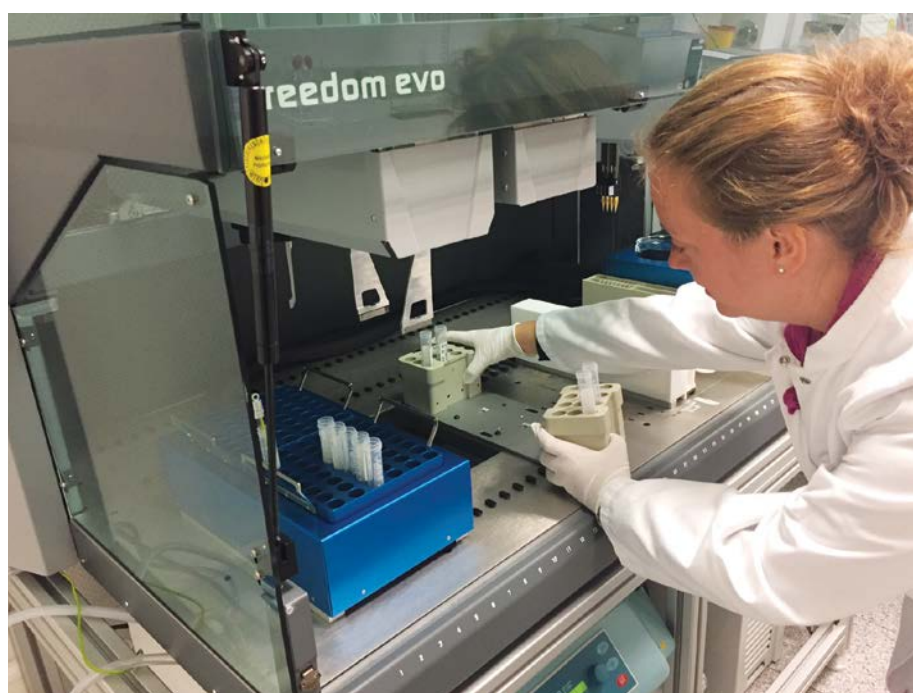
Dr Sarah Volpert, Head of Cytogenetics & Cancer Cytogenetics Laboratories, amedes-group

The amedes group is a network of 60 laboratories and medical practices located across Germany and Belgium that provides interdisciplinary medical diagnostic services for patients, doctors and hospitals, as well as delivering specialist laboratory management services to more than 40 hospital laboratories. The laboratories offer a wide range of tests, including standard and specialist laboratory medicine, microbiology, gynecology, oncology, pathology, endocrinology, cytology, hemostasis, dysplasia, prenatal medicine and genetics, processing more than 150,000 samples per day.

Two of the group's German laboratories – the MVZ Department of Laboratory Medicine and Clinical Genetics Rhein/Ruhr in Essen and the amedes MVZ

wagnerstibbe of Laboratory Medicine, Hemostasis, Human Genetics and Microbiology in Hannover – focus chiefly on genetic analyses, employing state-of-the-art technologies for molecular genetics and cytogenetic investigations. To cope with ever-increasing sample numbers and standardize procedures, the laboratories have implemented identical automation solutions tailored to their workflows, helping to ensure the quality and reliability of these complex processes within each lab and between the two sites. Dr Sarah Volpert, Head of Cytogenetics & Cancer Cytogenetics Laboratories, amedes-group, explained: “Our main focus is on human genetics, particularly prenatal screening and diagnosis, and oncology. We use a variety of molecular genetic techniques – Sanger and next generation

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The Tecan Integration Group customized the Freedom EVO to fit amedes' exact needs



The amedes team

sequencing, and array technologies – as well as cytogenetics by routine analysis of G-banded chromosomes and fluorescence *in situ* hybridization (FISH). In the past, this work has been done manually. However, with sample numbers continually rising and a need to reduce the time to results without compromising on quality, optimizing our processes to make the workflow as efficient as possible was essential. Automation was the logical way forward.”

Sarah continued: “As one of the largest cytogenetic laboratories in Germany, we handle a wide range of materials, including chorion and amniotic cells, fetal and peripheral blood, and bone marrow aspirates and tumor tissues from cancer patients. It is really important to have the flexibility to adapt our sample preparation processes to the individual requirements of each specimen type, and also to be able to expand to accommodate more samples in the future, if necessary. We needed a bespoke automated platform tailored to meet the specific demands of our workflows. We have used Tecan platforms in our clinical laboratories for a long time and so, although we looked at other systems, it made sense to stay with

the company as the instruments are high quality and we are familiar with their operation. We also set great store by good service and know from past experience that the company responds quickly if we need help, which is essential to avoid any delays in sample analysis.”

“With the help of the Tecan Integration Group (TIG), we transferred our manual processes onto a Freedom EVO** platform adapted to our needs, and are reaping the benefits. However good scientists are, there will always be individual differences in manual techniques; by implementing automated protocols, we have standardized quality and improved reproducibility. Turnaround times are also increasingly important. Automating our processes as much as possible enables us to operate for 12 hours, six days a week, starting earlier and taking advantage of the system’s huge capacity to run larger, 48-sample batches when we need to. This is particularly beneficial at peak periods, helping to reduce the underlying run times and allowing results to be reported more rapidly, which is especially important in prenatal diagnostics and oncology, where clinicians increasingly depend on the

results of genetic analyses to decide on the most appropriate course of treatment. Not only is the system time and cost efficient, but there are benefits for staff too; as much less hands-on time is required, highly qualified, experienced members of staff now have extra time to focus on more interesting, less routine tasks.”

“We have a very good relationship with Tecan. It is a well-known brand that we have faith in, and the company gives us very good support. We have local representatives who we know, and the central hotlines always guarantee quick communication, which is important for us. We really appreciate the company’s personal approach,” Sarah concluded.

To find out more about Tecan’s clinical diagnostics solutions, visit www.tecan.com/clinicaldiagnostics

To learn more about amedes, go to www.amedes-group.com

*Not for clinical use in the USA