

# A strong automation foundation

**Rapid advances in genomic and molecular diagnostic techniques have seen these technologies make a rapid transition from the research bench to the clinic. As with any test used for diagnostic applications, ease of use and reproducible, reliable results are crucial to the successful uptake of molecular methods, meaning that many IVD suppliers are turning to laboratory automation. Sansure Biotech has successfully developed a market for qPCR-based diagnostic technologies in China, and has partnered with Tecan to offer complete automation of its nucleic acid extraction and screening workflows.**

Molecular diagnostics is now widely used in a clinical setting, providing valuable insights into areas as diverse as prenatal screening, risk management, infectious disease diagnostics and oncology drug susceptibility testing. For a majority of

these applications, reproducible and effective pre-analytical sample processing is crucial for reliable results. This can be difficult to achieve manually in a busy, multidisciplinary hospital or clinical laboratory, making automation essential for the

widespread adoption of new molecular diagnostic technologies.

Chinese IVD manufacturer Sansure Biotech captures the importance of effective laboratory automation, and its ethos – combining accurate and



Members of the forward-thinking Sansure R&D team



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reproducible testing with ease of use and accessibility – has seen the company grow rapidly since it was founded in 2008. From the launch of its first products in 2010, it took just six years for the company to become the second largest corporation in the molecular diagnostics market in China, supplying over 2,000 hospitals and laboratories across the country. Mr Xu Fan, Vice President of Sansure, explained its approach: “Our aim is to popularize qPCR technologies as an affordable and accessible solution for diagnostics and healthcare management. Since the beginning, we have been dedicated to creating a complete product portfolio for molecular laboratories, from upstream nucleic acid extraction kits and full automation to downstream PCR. Our R&D center in Changsha is focused on developing products that not only provide high quality, reliable results, but are also easy to use in a variety of different laboratory environments. This approach has been very successful, and we are gradually establishing a reputation – both domestically and around the world – for our accessible qPCR technologies.”

Automation of its workflows has been crucial to Sansure’s success. “IVD companies generally have two options when it comes to automation; semi-automated or fully automated systems,” Mr Fan continued. “The molecular diagnostics market in China is currently

split, with large international suppliers – such as Abbott or Roche – adopting full automation, while the domestic providers generally offer semi-automated solutions. We chose to go down the full automation route to make our systems as straightforward as possible for the end user, and looked for an experienced liquid handling company to partner with. As an internationally recognized supplier of reliable automated liquid handling systems, Tecan was our first choice, and we have established a strong cooperative partnership with the company.”

“The Freedom EVO® 100 workstation is the automation core of our platform, which we then develop by integrating our own technologies to create a complete solution, from nucleic acid extraction to downstream PCR. The biggest advantages of this set-up are the reliability and productivity it offers. We already have market-leading extraction reagents, allowing high sensitivity, and automation ensures reproducible processing while greatly increasing throughput compared to manual processing, further increasing our competitiveness in the sector.”

“You will inevitably encounter challenges with any major product development, and this is particularly true for advanced automation systems combining components and technologies from multiple providers. With strong support from Tecan, we

were able to solve any issues quickly and efficiently. We have very stringent requirements for our suppliers in order to ensure the quality and consistency of our solutions, and the Tecan liquid handling systems are very reliable. If we do have an issue – such as instruments being damaged during transport – the company is very quick to respond. This type of support is crucial from an OEM supplier and has formed the strong foundations of our long-term partnership.”

“Tecan also has very strong after-sales support and is continuously optimizing both its technologies and service offerings, which in turn helps us to do the same, creating a positive cycle that complements each other’s advantages. Our aim now is to further develop our automated solutions with the introduction of additional features and modules, organically combining our reagents and technologies with Tecan’s platforms to grow the market for our products,” Mr Fan concluded.

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