

DELIVERING RAPID RESULTS AT THE POINT OF PATIENT CARE.

Tecan Journal Article.



TOPMEDLAB Medical Technology has developed an innovative, immunofluorescence analyzer to meet point-of-care testing needs. This user-friendly instrument offers rapid results and is easy to maintain, making it ideal for situations where time is of the essence.

TOPMEDLAB (TOPMEDLAB) Medical Technology Co. Ltd., headquartered in Suzhou, China, was established in 2015 with a focus on in vitro diagnostic products. The company's **ROFI INFINI** analyzer is a fully automated immunofluorescence detection system designed to meet the demands of point-of-care testing (POCT). Yunping Zhang, Vice President of Production at TOPMEDLAB, explained: "ROFI INFINI was the brainchild of our company founder - originally an emergency department doctor - who wanted to develop a system to help overcome the pain points of POCT. POCT is very convenient in settings such as fever clinics, emergency departments, chest pain centers and cardiology suites. ROFI INFINI is designed to enable on-the-go testing, and is ideal for handling whole blood samples, as well as serum and plasma. This fully automatic system is easy to operate, and can be used within one minute of powering up. The designated test is performed directly from a blood collection tube using air displacement liquid handling - no system liquid lines are required within the instrument - and the test report is issued quickly afterwards. This enables rapid testing for cardiac and tumor markers - as well as infectious diseases and other microbial pathogens - and maintenance is very simple, making it ideal for a POCT setting."

Yunping continued: "I first came across **Tecan** when I entered the industry in 2011, and consulted them about the selection of liquid lines. Later, when we came to develop the ROFI INFINI, we spoke to Tecan about the **Cavro® Air Displacement Pipettor (ADP)**, to explore the possible use of this product in our analyzer. Tecan gave us a detailed explanation of the product and its advantages, and helped us to evaluate its safety and effectiveness for our purpose, to assess its suitability for our specific instrument needs."

"We chose the Cavro ADP for a number of reasons," said Yunping. "Our users are divided into doctors and patients, and so the ROFI INFINI must offer quick and simple operation to meet their needs. Maintenance of the Cavro ADP is also straightforward, contributing to a low long-term cost. Many of the products on the Chinese market use cap-puncturing solutions to achieve full automation, but these have inherent issues, such as plastic particles from the cap blocking the needle. In addition, they often employ reusable needles that need to be cleaned between samples, which can be a cause of cross-contamination. In contrast, the Cavro ADP uses disposable tips, taking advantage of air displacement liquid handling and fundamentally eliminating the risk of cross-contamination. The Cavro ADP can also detect clots and air

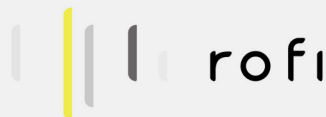
bubbles - which can easily occur when testing whole blood - and this is a clear advantage for minimizing measurement errors. Importantly,



ROFI INFINI analyzer

integration of the Cavro ADP ensures the overall accuracy of our equipment; we had previously evaluated a different product, but found it lacked the necessary reliability and consistency. The Cavro ADP was simply the best choice for our instrument in terms of repeatability, reliability, and durability, as well as ease of maintenance and integration."

"The Cavro ADP is responsible for the entire liquid handling process, from sampling to detection. Sample tubes are placed in the analyzer - time-consuming centrifugation is not required - and automatically uncapped while the Cavro ADP attaches a disposable tip. The system then automatically positions the reagents and consumables while the Cavro ADP aspirates the sample and dispenses it into the micro-buffer solution for reaction. An aliquot of this solution is then placed into the loading position of the test card, and the sample tube is recapped to avoid contamination. After three to eight minutes of incubation, the liquid enters



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To learn more about TOPMEDLAB and ROFI INFINI analyzer, go to topmedlab.com

the measurement position and is read fluorescently, with the results reported in 10 minutes. The combination of the Cavro ADP with our system's fully automatic scheduling enables testing of as little as 20 µl of blood – a huge benefit in pediatrics.”

“Tecan helped us a lot during the instrument design phase, and integration of the Cavro ADP into the analyzer went smoothly. Practical application guidance was also provided, including pipetting techniques, equipment installation, and maintenance – as well as offering solutions to application challenges – and verification studies at the Henan Provincial People's Hospital and the Beijing Chaoyang Hospital have demonstrated excellent results. Tecan is a very professional enterprise, with a large team behind it, and invests significantly in research and development. This greatly shortens the product development cycle for innovative medical companies like TOPMEDLAB and, at the same time,



reduces the risks, which is a great advantage. Without the Cavro ADP, we would have had to build the liquid lines ourselves, and the complexity of workload and maintenance would be unimaginable. Integration of a Tecan Cavro pipettor overcame this issue, and ensured the positioning and reputation of the ROFI INFINI in the marketplace. Currently, the ROFI INFINI is only available in the domestic

market – although it has been designed in accordance with both China's **CFDA certification** and the **European Union In Vitro Diagnostics Regulation** – so we hope to establish overseas sales channels in the future. The cooperation with Tecan has been excellent from the outset, giving us confidence that our equipment will operate very well after mass production,” Yunping concluded.

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