

A perfect fit for the Freedom EVO[®] 75 in forensic toxicology

Immunoanalysis Corporation, in California, USA, provides customized semi and fully automated drugs of abuse screening solutions to forensic toxicology laboratories and works closely with Tecan, tailoring the Freedom EVO[®] 75 liquid handling workstation as the platform of choice for its customers.

Immunoanalysis Corporation develops and produces a variety of assays, including ELISA, HEIA, enzyme and RIA formats for measuring illicit and legal prescription drugs in the wide range of biological matrices encountered by toxicologists, from urine and blood to hair and tissue extracts, as well as others. As Michael Vincent, Vice President of Operations at Immunoanalysis, explained: "Our screening solutions are entire panels of ELISA test kits, typically processing from 24 to 96 samples and controls in each run, using panels of six to fifteen assays. Immunoanalysis tests work with a common sample dilution to enhance throughput; our customers no longer need to perform multiple dilutions for different tests but can run an entire panel of tests using the same sample dilution."

Immunoanalysis' customers often share the common goal of testing for a wide range of drugs, but the ELISA panels and the processes required to run them vary considerably, depending on various factors, including geographical location, legal considerations, and laboratory throughput. These varied requirements call for a flexible approach to automation and for several years, the team at Immunoanalysis has worked closely with colleagues at Tecan, perfecting unique solutions for each individual customer.

Robert Gabardy, from Forensic Sales at Immunoanalysis, said: "We are essentially a one-stop shop for our customers, so the instruments are delivered directly to us from Tecan, allowing our Application Group to program each customer's specific requirements and application into their workstation. We then go to the customer's laboratory to install the equipment and bring consumables so they can run assays within two or three days. We also train the users on how to define the tests, configure the workstations, and how to perform proper maintenance and trouble-shooting."

In recent years, the Freedom EVO 75 has been the platform of choice for Immunoanalysis, as Michael explained: "The Freedom EVO 75 workstation is a robust instrument that gives our customers the accuracy and safety assurances that are vital for their work. It can process up to six plates in one run, ideal for medium throughputs, and the Freedom EVOware[®] software that runs it is very flexible with many options. An excellent feature for forensic toxicology is that the Freedom EVO 75, using Freedom EVOware, takes enough sample for all the required tests in just one aspiration, so that each sample tube is only entered once, and then dispenses different volumes to each independent test. This is very important

for our customers because, with proper techniques, there is virtually no risk that samples from one person could ever be contaminated with those from another individual. Perhaps the most important factors for continuing to choose this instrument for our customers, though, are its excellent sample tracking properties. When so many samples are going through multiple assays, the integrity of the testing is critical and the Freedom EVO 75 maintains this admirably."

The Freedom EVOware tracks the entire process, from the initial sample tube to the final assay microplate, and keeps track of the position of each sample in all six plates. When a sample is ultimately read on the microplate reader, the application program Magellan[™] accesses the pipetting file and shares the data. The software tracks where all the samples are as well as where there have been errors, such as short samples or clots, and reports all this in addition to the final results for each microplate. Immunoanalysis' single case reporting software will accumulate all this data so that the user has all of those test results at his or her disposal on a single piece of paper. To do this manually could result in errors, so sample and error tracking cannot be overstated in their importance.



“The assurance of automated sample and error tracking is vital for our customers because their results will often be presented in a court of law and can have a direct bearing on a verdict of driving under the influence, or for confirming a cause of death, or other equally critical issue,” Michael added.

Rochelle Timbang, from the Application Group at Immunalysis, continued: “The liquid handling flexibility of Tecan’s Freedom EVOware software allows us to modify the system and customize parameters, such as speed of aspiration and dispensing to handle different types of matrices. Our customers work most frequently with blood as the biological matrix and, because blood needs to be aspirated more slowly than urine, this needs to be taken into consideration. If insufficient blood is picked up, this could give a false negative result. The software is very easy to customize and to use, both

for the Application Group to initially configure the instrument and train customers, and for the users themselves to manipulate a few specified parameters, such as sample volumes and sample numbers.”

Michael concluded: “A significant advantage of Tecan’s Freedom EVO family of instruments is that, once we have configured the Freedom EVO 75 platform, the same software and characteristics can be extrapolated to larger platforms in the same series. This means that our customers can easily upgrade their systems if their throughput requirements grow, with minimal re-training of operators. We enjoy a very good relationship with our colleagues at Tecan and, although Immunalysis is the customers’ first port of call, Immunalysis and our customers know that Tecan’s application specialists and service group are there for advice and support should it be required.”

The Freedom EVO 75 at Immunalysis



The team at Immunalysis (from l to r, Kelvin Barnes, Robert Gabardy, Jeremy George, Rochelle Timbang)

