

ASCENT from Indigo BioAutomation

Precision Diagnostics places a primary focus on providing the most accurate test results possible. The use of liquid chromatography with tandem mass spectrometry (LC-MS/MS) is highly sought after by providers due to its speed, accuracy, and precision. As a clinical laboratory service, we test for a multitude of different compounds, including prescription and illicit drugs in two different media: urine and oral fluid.

Over the last 30 years, the technology used in sample preparation for LC-MS/MS and its attendant instrumentation has grown substantially, while the software available to interpret the significant amount of resulting data has struggled to keep pace. Lacking a sophisticated software to analyze the data, our manual system of data review was time consuming, costly, taxing on the reviewer, and potentially error prone. This led us to seek out a software solution that could streamline our post-analytical phase.

Custom Rules for Data Analysis

The ability to design custom rules was a particularly beneficial function of the software we were seeking to acquire. In reviewing ASCENT from Indigo BioAutomation, we found we could enact our own rules, highlight chromatography that may be questionable, and allow our scientific review team to focus on those questionable results, specifically. The software also enables us to create custom rules based on our unique QC process, as well as eliminate some of the background noise that can simply pass through the system without human intervention.

Moving from a process where all integration parameters and necessary rule data were determined and manually input required some getting used to, but exploring the software gave us great insight into its functions and settings, and several staff members were able to absorb the training allowing for versatile use. Currently we are able to perform

most troubleshooting ourselves, which is a testament to the vendor's strong training and ongoing support. In the event we cannot fix an issue, a quick message to the ASCENT support team usually gets us up and running same day. The support team has been able to decipher any cryptic rule we come up with and has helped us improve internally by refining and quickly deploying our own rules.

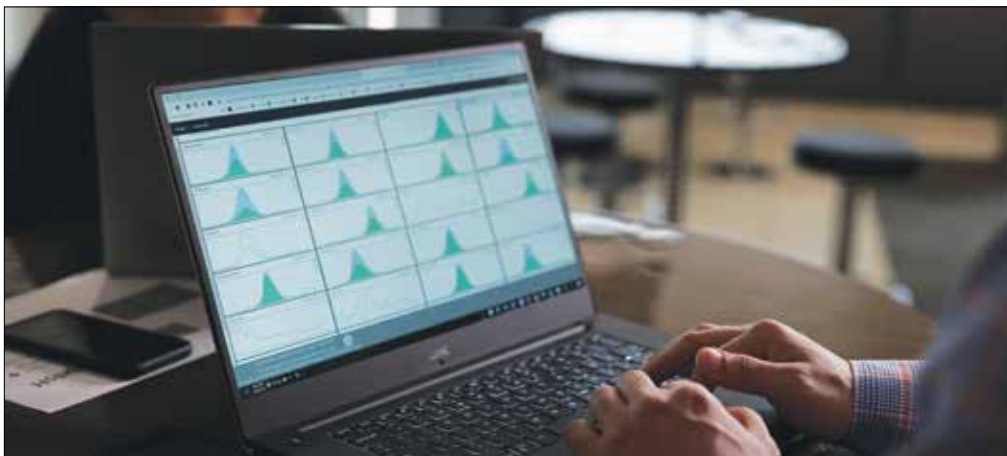
Operational Improvement

The use of ASCENT has helped streamline and improve the operations of our LC-MS/MS workflow with a marked decrease in result turnaround times and sample repeats. Prior to ASCENT, a batch of 96 samples took approximately 3 hours to review. Whereas after continually improving our assays in concert with ASCENT, we are currently able to review 96 samples in approximately 45 minutes.

Our laboratory operations are always seeking improvement and we are currently validating a process that should help further reduce review time and improve quality and patient outcomes. As with other leading-edge technologies, the information generated through LC-MS/MS can be daunting to new adopters, but over time, it can lead to substantial operational efficiencies. Stay the course, seek out solutions such as ASCENT to help harness these data and make them work for your specific laboratory and patient population. Likewise, continue to push the abilities of your mass spectrometry technologies by running numerous validation samples, which will aid in identifying areas of further improvement and will help familiarize staff with a new way of review, one that perhaps many have never seen before. ■

Boosting Efficiency & Quality

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