



The Power of Precision

Customer case study

Dr. Nimmi Kansal
National Head, Clinical Chemistry and
Biochemical Genetics, Dr. Lal PathLabs Ltd.



“LC-MS/MS can be a transformational technology to engender assay development and deliver confident data for Newborn screening, Immunosuppressants and Vitamin D in Clinical labs.”

Project goal

To verify the performance of quantification methods for estimating amino acids and acylcarnitines in dried blood to screen for metabolic disorders in newborn babies, immunosuppressant drugs and 25-hydroxyvitamin D.

Biggest challenges right now

- Selectively quantify newborn screening analytes (amino acids and acylcarnitines) in a single run in a minimal amount of time.
- The need for accurate, precise and standardized measurement of immunosuppressant drugs presents a major challenge for clinical laboratories and the diagnostics industry.
- Develop a sensitive and robust method to quantify the various analytes from a complex matrix such as whole blood for immunosuppressant drugs.
- Reduce the potential for false positive results during analysis.

The solution

- The SCIEX Triple Quad™ 4500 LC-MS/MS System for attaining quantification limits for multiple compounds when the sample volume is small but the number of samples is large and each sample has multiple analytes—for inborn errors of metabolism, for example, the system enabled the elimination of around 50 analytes in 90 seconds.
- ChemoView™ Software for direct processing of data generated in Analyst® Software and quick screening and reporting of a large series of compounds in a high-throughput manner.
- Structured support from SCIEX application and service teams to achieve the project goal within the required time frame.

Outcomes

- The SCIEX Triple Quad 4500 System is rugged, robust and highly reproducible. It enabled development of a sensitive and precise method to screen and report metabolic disorders in newborn babies, confidently.
- The team successfully analyzed immunosuppressant drugs and Vitamin D using a sensitive, specific method capable of measuring several compounds in a single run on the SCIEX Triple Quad 4500 System.

“Application insights coupled with hands-on support from SCIEX to capitalize on full potential of 4500 hardware as well as MultiQuant and Chemoview softwares helped us achieve several breakthroughs in assay development.”

Type of organization

Dr. Lal PathLabs Ltd. is a center of innovation and a leading clinical pathology laboratory in India that adheres to the highest international standards. It provides access to one of the best diagnostic pathology services in India through a nationwide network consisting of National Reference Laboratory in New Delhi, Kolkata Reference Laboratory, 190+ other clinical/medical laboratories, 1,700+ lab patient service centers and 5,000+ pickup points. It is known for pioneering the introducing new tests, maximizing the quality of testing by introduction of new cutting-edge technology and transferring knowledge to the entire medical community.

Goals

To be the undisputed market leader by providing accessible, affordable and quality healthcare diagnostics

SCIEX products

- SCIEX Triple Quad™ 4500 LC-MS/MS System
- MultiQuant™ Software 3.0.3
- Analyst® Software 1.6 and 1.7
- ChemoView™ Software