SCIEX

Answers for Science.
Knowledge for Life.™

Case Study

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Project Goal

To assess the advantages of moving from ligand binding assays (LBA) to microflow LC-MS/MS for large molecule bioanalysis and how the source design affects performance gains.

The Challenges

- Inadequate sensitivity and selectivity for some bioanalytical assays using LBA or conventional flow LC-MS/MS
- Any new equipment and methodologies must be rugged and reliable, and require minimal optimization
- Any changes to established equipment and methodologies must require minimal new training of lab personnel

The Solution

- Microflow LC-MS/MS using the Optiflow® Ion Source with our SCIEX triple quadrupole instruments. Column directly connects to source.

The Outcomes

- Large gains in peak area and peak height with microflow LC-MS/MS and Optiflow Source for large and small molecule bioanalysis, equating to major improvements in S/N (4-20x) and lower LLOQ
- Direct connection port for LC column minimizes dead volume resulting in less band broadening, less tailing, and more narrow peaks
- Source requires minimal to no optimization
- Source requires less than 10 minutes of training
- Have now analyzed many samples to support both clinical and pre-clinical large and small molecule studies by microflow LC-MS/MS using the Optiflow Source including some challenging programs that had selectivity and sensitivity issues that were solved with this workflow

"How a source is designed for microflow is critical for performance. You can't just use a conventional source at microflow rates and expect to get good results. We love the Optiflow source. You put it on and it works. Optiflow is well-designed, convenient, easy to set up in seconds, and we get better results. No adjustments necessary. That convenience is worth gold."

Type of Organization

Contract Research Organization (CRO) specializing in pre-clinical and clinical LC-MS/MS and GC-MS/MS bioanalysis.

Goals

Development and validation of assays for the determination of therapeutic agents and biomarkers from biological matrices, supporting drug candidates from discovery through phase IV clinical trials.

Applications

Bioanalysis, method development and validation, and biomarker quantitation.

SCIEX Products

- Triple Quad Systems including 6500+, 6500, 5500, API 5000, 4000
- Optiflow™ Turbo V Ionization Sources
- Optiflow™ Interfaces

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