OptiFlow Quant solution for high-sensitivity quantitation

The intelligent union of sensitivity, ease of use and robustness

Sciex
The Power of Precision
Microflow sensitivity with analytical flow usability

Transform your quantitation

Discovery and development of novel biomarkers and biotherapeutics are increasingly requiring more sensitive assays with less sample. To meet this demand, many researchers are turning to low flow rate regimes, but they are struggling with the complexities associated with this approach. With the OptiFlow Quant solution from SCIEX, you can achieve the sensitivity benefits of moving to microflow rates without sacrificing the robustness and usability you’ve come to expect from traditional analytical flow rate assays.

**Enhanced sensitivity**

The M5 MicroLC system supports flow rates down to 1 µL/min to increase ionization efficiency, and it is now compatible with SCIEX OS software.

**Innovation to drive usability**

The new OptiFlow Turbo V ion source supports a wide flow rate range, and it requires no manual adjustment for optimized spray.

**Flexibility to take on any challenge**

Use any microflow LC column in any column chemistry for ultimate workflow flexibility. Choose from a large portfolio of microflow LC columns from our affiliates at Phenomenex.

**Improved lab efficiency**

SCIEX OS software facilitates compound analysis and sample testing in an all-in-one platform for control, analysis and reporting, and it includes support for CFR 21 Part 11 compliance.

**Trusted mass spectrometer performance**

High-performance MS systems and powerful software from SCIEX can support even the most regulated labs.

**Amplify your analyte**

Gain up to a 10x increase in sensitivity to take your small and large molecule assay performance to the next level.

**Selectivity with no method development**

High-resolution multiple reaction monitoring (MRM) approaches are the most flexible for high-quality targeted quantitation.
The ultimate balance of sensitivity and robustness

M5 MicroLC system

Now you can gain sensitivity and improve signal-to-noise by moving to microflow rates on the M5 MicroLC system. Get the throughput and robustness you need for large sample studies without the added complexity of making difficult column and source connections.

Cost savings
Reduce cost per sample with up to 250x less solvent consumption than analytical flow assays.

Accurately sensitive
Microfluidic control for accurate flow rates down to 1 µL/min helps you quantify samples with an up to 10x lower LLOQ compared to analytical flow.

Maximize the use of limited sample
Vial bottom-sensing technology ensures that limited sample is fully utilized.

Maximize throughput
A trap-elute option with an additional gradient pump provides fast offline sample loading to reduce analysis time.

System specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow rate ranges</td>
<td>1–10 µL/min</td>
</tr>
<tr>
<td></td>
<td>5–50 µL/min</td>
</tr>
<tr>
<td></td>
<td>20–200 µL/min</td>
</tr>
<tr>
<td>Autosampler</td>
<td>6 sample tray capacity</td>
</tr>
<tr>
<td>Injection volume range</td>
<td>2–50 µL</td>
</tr>
<tr>
<td>Trap-elute (TE) option</td>
<td>Additional valve and gradient pump</td>
</tr>
<tr>
<td>SecurityLINK tubing and fittings</td>
<td>Finger-tight, zero dead volume</td>
</tr>
</tbody>
</table>

Improvement in peptide sensitivity at microflow, with similar assay throughput

A 3.08% peak area ratio CV over 500 injections is shown with no increase in back pressure.

Peptide mix separation (500 µL/min) is shown with a 2.6 µm C18 3 x 50 mm column and no matrix.

An average signal-to-noise (S/N) increase of >10x using microflow peptide separation (3 µL/min) is shown with a 2.7 µm C18 0.2 x 50 mm column and no matrix.
Simplified setup for optimal microflow ionization

Based on the trusted Turbo V ion source, the OptiFlow Turbo V ion source provides the robustness and simplicity you’ve come to expect from traditional analytical flow LC-MS—now for more sensitive microflow regimes (1–200 µL/min). Engineered with enhanced gas flow dynamics and new features for maximizing ion production and robustness, the OptiFlow Turbo V ion source helps to ensure consistency in results across multiple systems and multiple users.

**Maximized intensity with no manual adjustments**
Intelligent probe-sensing technology presets system source settings to an optimal range for the best spray conditions, eliminating manual adjustments on the source and decreasing optimization time.

**Retention time consistency**
An integrated column heater with heating up to 90°C supports challenging separations.

**Consistent high quality spray**
SteadySpray probes are designed give consistent droplet formation and stable spray at microflow rates.

**Extended time between cleanings**
Scheduled ionization minimizes ion optic contamination and maximizes the length of time between instrument cleanings.

**Increased ion production**
Larger heaters improve ionization efficiency.
Proven mass spectrometry performance across a wide range of analytes

Industry-leading mass spectrometry systems from SCIEX are designed to handle any quantitation challenge that you face, today and in the future. With a combination of best-in-class hardware and extremely high sensitivity and linear dynamic range, they are trusted to deliver accurate analysis of both small and large molecules in complex sample matrices.

**Significant sensitivity improvement for small molecule analytes**

<table>
<thead>
<tr>
<th>Compound</th>
<th>Avg. area gain</th>
<th>Avg. signal-to-noise gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naproxen</td>
<td>25.9</td>
<td>60.7</td>
</tr>
<tr>
<td>Buprenorphine</td>
<td>6.7</td>
<td>13.9</td>
</tr>
<tr>
<td>Propranolol</td>
<td>6.1</td>
<td>15.4</td>
</tr>
<tr>
<td>Alprazolam</td>
<td>5.3</td>
<td>33.5</td>
</tr>
<tr>
<td>Dextromethorphan</td>
<td>5.2</td>
<td>10.7</td>
</tr>
<tr>
<td>Buspirone</td>
<td>5.0</td>
<td>8.4</td>
</tr>
<tr>
<td>Haloperidol</td>
<td>4.8</td>
<td>9.0</td>
</tr>
</tbody>
</table>

An analytical flow assay (pink) was performed at 500 µL/min [2.1 mm ID column] followed by a microflow assay (blue) at 3 µL/min [0.2 mm ID column]. Each used a 2 µL injection volume and the analysis was repeated across 3 sample concentrations.

**Consistent sensitivity improvement for a wide range of peptides**

LLOQ gains and peak area improvements are shown for 10 synthetic peptides in diluted crashed plasma using microflow LC-MS at 3 µL/min vs. analytical flow LC-MS at 500 µL/min.

Calibration curves are shown for a synthetic peptide [VGNEIQVALR] in diluted crashed plasma using microflow LC-MS at 3 µL/min and analytical flow LC-MS at 500 µL/min. LLOQ with microflow LC was 8x lower than what could be achieved with analytical flow LC-MS, and linearity was excellent for both flow rates.
Flexibility for the best performance

Improve your microflow LC applications for a wide range of column selectivities

Gain maximum flexibility by using Phenomenex microflow LC columns in a variety of column chemistries to help ensure the best possible performance for your analyte types. Phenomenex, a SCIEX partner, offers a large and diverse portfolio of microflow LC columns and a commitment to product reliability for a wide range of flow rates.

Select the right chemistry for your application

- **Peptide analysis and quantitation**
  - Luna™ Omega PS-C18
  - Kinetex™ XB-C18
  - Jupiter™ Proteo

- **Metabolomics**
  - Kinetex Biphenyl

- **Small molecule quantitation**
  - Luna Omega C18
  - Luna Omega Polar C18
  - Synergi™ Fusion-RP [C18]
  - Synergi Hydro-RP [C18]
  - Kinetex EVO C18
  - Gemini™ C18

- **Oligonucleotides**
  - Luna NH2

- **Drug research panels**
  - Kinetex Biphenyl
  - Kinetex Phenyl-Hexyl
  - Luna Omega Polar C18

Select the right solid support

- **Fully Porous traditional silica**
  - Excellent mechanical strength (Luna, Synergi, Jupiter)

- **Core-shell**
  - High efficiency, sensitivity and fast run times (Kinetex)

- **Fully porous/Core-shell organo-silica**
  - pH stability from 1–12 (Gemini, Kinetex EVO)

- **Thermally modified fully-porous silica**
  - High efficiency, sensitivity and inertness (Luna Omega)

For column ordering information, visit: www.phenomenex.com/microLC

Finger-tight fittings enable a simple, tool-free setup every time.

Trapped columns provide additional sample cleanup capabilities.

For more information, visit: sciex.com/OptiFlowQuant
The intelligent union of sensitivity

Ease-of-use, and robustness for quantitation

The OptiFlow Quant solution from SCIEX combines the sensitivity of microflow separations with the reliability of traditional analytical flow assays. Its robust system and proven mass spectrometry platform handle all bioanalytical challenges.

SCIEX OS software enhances lab efficiency, facilitates compound analysis and sample testing and provides an all-in-one platform for control, analysis and reporting. It also enables real-time decision-making and outlier functionality for peak modeling and calibration curve review. The software is compliant with 21 CFR Part 11, offers customizable security settings and, includes a reliable validation support team.
SCIEX Now support network

SCIEX Now

- Manage your instruments
- Submit and manage support cases, track status and view history
- Access online training courses and articles
- Manage software licenses linked to your registered instruments
- View and report critical instrument statistics when connected to the StatusScope remote monitoring service
- Be a part of the SCIEX community by submitting questions and comments
- Receive notifications from SCIEX with content based on your preferences

SCIEX Now Learning Hub

- SCIEX Now Learning Hub success programs provide LC-MS and CE training customized to meet your exact needs
- With a selection of training methods and certifications available, you can build a mass spectrometry learning program that is most suited to your lab and users
- By starting with a clear understanding of your desired learning outcomes, we help you improve lab productivity and consistency by designing and delivering a program that is focused on knowledge advancement and retention

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