Bioanalysis Quantitation Applications eBook

Technology that powers the future of bioanalysis, today.
A Legacy of Innovation for Quantitation

Bioanalysis studies are an integral part of therapeutic development. Scientists must quantify drug products to impeccable levels of sensitivity and selectivity to ensure proper dosage, efficacy and safety. At the same time, many labs are facing the inevitable move to more complex large molecule and biologics bioanalysis. As therapeutics continually evolve to become more complex, we can help you to keep up with the pace of change with the right technology and the right support.

In 1981 SCIEX revolutionized small molecule bioanalysis by launching the first commercially successful triple quadrupole MS instrument, starting a long legacy of pioneering solutions that give bioanalytical scientists a platform to master high throughput therapeutic quantitation while achieving the required levels of compliance and data quality – for both small and large molecules.

Explore this eBook to learn more about how SCIEX continues to reimagine therapeutic quantitation in more innovative and productive ways with high-performance hardware, software, sample prep solutions, and lab-tested analysis methods.

MultiQuant™ Software: Fast and Compliant Quantitation

- Fast and reliable quantitative data processing
- Simple reporting and compliant with regulatory guidelines
- Ensure security, but without additional expenses
- Maximize efficiency with single software package for broad range of LC-MS platforms, from Triple Quad to HRMS
Accurate and robust quantitation of small molecule therapeutics can be complicated by matrix interferences, or by the need for achieving increasingly lower LOQs in complex sample matrices. SCIEX best-in-class hardware provides excellent sensitivity and linear dynamic range, along with the option of SelexION™ DMS technology for an orthogonal level of separation when additional selectivity is required.

Explore how in the following technical articles:

- A Sub-picogram Quantification Method for Desmopressin in Plasma using the Triple Quad™ 6500 System
- Highly Sensitive and Robust Quantification Method for Ethinyl Estradiol and Drospirenone in Plasma
- Bioanalysis of β-Lactamase Inhibitors on the QTRAP® 6500+ System
- Quantitation of Limaprost, an Analogue of PGE1 in Human Plasma
- Separation of Diastereomeric Flubatine Metabolites using SelexION® Technology
- A Novel Technique for the Bioanalysis of Poorly Fragmenting Molecules like Valproic Acid
- Improving MRM Selectivity for Mesalamine Quantitation with SelexION® technology and Triple Quad 5500
- Highly Sensitive LC-MS/MS Method for the Quantification of Fluticasone Propionate in Human plasma, using the SCIEX QTRAP® 6500 System
Peptide and Protein Quantitation

Bioanalytical researchers need to develop and validate highly selective and sensitive assays to quantify the levels of biotherapeutic peptides or of signature peptides for target proteins in complex matrices, such as serum and plasma.

SCIEX has designed solutions that tackle each challenging part of peptide quantitation. From sample prep through to data processing, you can automate and streamline every aspect of your workflow while achieving outstanding linear dynamic range and sensitivity with best-in-class LC-MS hardware.

Explore how in the following technical articles:

- Quantitation of Insulin Glargine in Human Plasma using Immunocapture-Based Target Enrichment and Trap-and-Elute Microflow LC-MS/MS
- Signature Peptide Quantitation for Follicle Stimulation Hormone (FSH) in Human Serum
- Benefits of Differential Ion Mobility Spectrometry for High-Sensitivity Quantitation of Peptides
- Sensitive and Reproducible Quantitation for Pegylated Interferon α-2b in Serum
- Multiple Mass Spectrometric Strategies for High Selectivity Quantification of Protein and Peptides

Customer Webinar:

Quantification of Peptides in Complex Matrices
Watch the Video >
Pharmacokinetic Analysis of Adalimumab by ELISA and Hybrid LBA-LC/MS: A Comparison Study

Pharmacokinetic Analysis of Trastuzumab by ELISA and Hybrid LBA-LC/MS: A Comparison Study

Improving Sensitivity for Infliximab Quantitation in Rat Plasma using Trap-and-Elute MicroLC-MS/MS

Analysis of Intact Monoclonal Antibodies using M3 MicroLC and TripleTOF® 6600

Sensitive and Accurate Quantitation of the ADC Ado-Trastuzumab Emtansine in Rat Plasma

Customer Webinars:

Bioanalysis of Antibody Drug Conjugates (ADC) using Hybrid LBA/LC-MS and the BioBA Solution

Watch the Video >

LC-MS/MS-based quantitative monitoring of protein biotransformation

Watch the Video >

mAbs and ADC Quantitation

Developing a sensitive and selective quantitative assay for a mAb or antibody drug conjugate (ADC) can be time consuming and complicated. Developing sample enrichment protocols, choosing signature peptides, and optimizing LC-MS conditions are all critical to creating a robust and reliable quantitative assay.

SCIEX quantitation solutions were designed to accelerate your quantitative method development. From sample preparation kits, and peptide optimization software, to lab-tested vMethods for common biotherapeutics, see how analysis of complex biologics is assisted by our best-in-class hardware and software systems.

Explore how in the following technical articles:
Lipid and Oligonucleotide Quantitation

Oligonucleotides represent a significant quantitation challenge due to their large size, polar nature, and the presence of sample impurities from synthesis methods. Similarly, quantitative analysis of lipid extracts is difficult due to the large isobaric overlap present in the lipidome, and extensive method development that is usually required to maintain specificity during analysis.

SCIEX innovative SelexION® differential mobility spectrometry (DMS) technology can greatly enhance the specificity of these challenging lipid assays by separating isobaric species and decreasing overall background noise. Similarly, SCIEX high-resolution accurate mass QTOF systems can provide enhanced selectivity for oligonucleotide detection and quantitation.

Explore how in the following technical articles:
QTRAP® technology delivers equivalent or better data, and more of it, than you can capture on an ordinary triple quad system.

Learn how to overcome the top challenges you may encounter using QTRAP Technology:

1. Quantitation challenges due to complex matrices?
   QTRAP technology can decrease the worry for accurate quantitation free from matrix interferences.
   **Increase data selectivity beyond triple quad technology.** The integrated Linear Ion Trap’s (LIT) unique MRM² scan functionality enables quantitation from second generation fragment ions, decreasing matrix interferences without added sample prep.

2. Not sure about the accuracy of your compound ID?
   QTRAP technology can reduce the doubt for definitive compound identification.
   **Increase specificity beyond triple quad technology.** QTRAP’s enhanced product ion (EPI) functionality gives you complete MS/MS spectra to cross reference with an integrated library for ultimate confirmation when reporting your results.

3. Looking to increase throughput by decreasing sample rechecks?
   QTRAP technology produces more high quality results in every run.
   **Increase throughput beyond triple quad technology.** By capturing MRM and enhanced product ion (EPI) MS/MS confirmation scans in one injection, you get high quality MRM quantitation with MS/MS confirmation at once for ultimate throughput and fewer rechecks.

4. Needing to find unknowns in your samples?
   QTRAP technology has the tools for your search.
   **Screen for unknowns better than you can with triple quad technology.** With the enhanced mass spec (EMS), enhanced resolution (ER) and enhanced product ion (EPI) scanning capabilities, QTRAP can help you find and characterize components in your sample.

5. Being asked to do more than just quantitation?
   QTRAP technology gives you diversity.
   **Enable your lab with functionality beyond triple quad technology.** Sensitive and robust MRM quantitation combines with multiple other unique enhanced scan functions, giving you the quantitative performance of a triple quad system with added power to develop new methods or improve your existing workflows. Experience the power to do so much more on one mass spec system.

QTRAP meets the challenge.