Thermo Scientific VetDrugs Explorer Collection

Start-to-finish targeted quantitation workflows for today and tomorrow’s veterinary drugs analysis
Transforming Complex Assays into Simple Workflows

The Thermo Scientific™ VetDrugs Explorer Collection is a pre-tested, validated start-to-finish multi-residue veterinary drug analysis solution that offers robust, reliable, and sensitive quantitation addressing global regulatory requirements. For laboratories focused on starting or expanding their veterinary-drug testing capability, this solution ensures confident quantitation of more than 160 veterinary drugs in a variety of matrices, regardless of user expertise.

The comprehensive VetDrugs Explorer Collection includes:

- Quality control (QC) and reference standard mixes
- QuEChERS kit with sample preparation procedure
- Industry leading triple quadrupole mass spectrometers with state of the art UHPLC and columns
- Data acquisition and processing methods, with an extensive compound database, tested and validated by industry thought leaders in multiple laboratories
The challenges of developing robust, sensitive quantitation workflows for multiclass veterinary drugs analysis are numerous. Add to it the complexity of reducing cost per sample while achieving the highest performance capability. The VetDrugs Explorer Collection offers an optimized, total solution to ensure successful quantification of veterinary drugs in animal matrices.

The Thermo Scientific™ TSQ Altis™ triple quadrupole mass spectrometer provides the highest possible sensitivity and scan speed, enabling your lab to meet current and future regulations for veterinary drugs analysis.

**VetDrugs Explorer Solution**

<table>
<thead>
<tr>
<th>Premium Quantitation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MS Systems</strong></td>
</tr>
<tr>
<td>TSQ Altis triple quadrupole mass spectrometer</td>
</tr>
<tr>
<td><strong>LC Systems</strong></td>
</tr>
<tr>
<td>Thermo Scientific™ Vanquish™ Flex Binary UHPLC</td>
</tr>
<tr>
<td><strong>Software</strong></td>
</tr>
<tr>
<td>Thermo Scientific™ TraceFinder™ software including acquisition and processing methods, and comprehensive compound database</td>
</tr>
<tr>
<td><strong>Accessories Included</strong></td>
</tr>
<tr>
<td>QuEChERS kit</td>
</tr>
<tr>
<td>VetDrugs QC sample kit</td>
</tr>
<tr>
<td>VetDrugs standard kit</td>
</tr>
<tr>
<td>Thermo Scientific™ Accucore™ VDXcolumn</td>
</tr>
<tr>
<td>Quick Start and User Guides</td>
</tr>
</tbody>
</table>

Thermo Scientific triple quadrupole systems offer unique benefits including Highly Selective Reaction Monitoring (H-SRM), with class leading sensitivity and features that will help every food safety laboratory, regardless of expertise, address their scientific and business goals with ease.

*Advantage of H-SRM for Fluazuron in salmon filet extract: Noise is significantly reduced allowing improved selectivity against the matrix with high ion transmission*

---

"It is estimated that more than half of the chicken sold in the United States in 2018 will be produced without the use of any antibiotics, and the focus of consumers and retailers is now extending to “No Antibiotics Ever” pork and beef production systems. To ensure compliance in these production flows, analytical testing for drug residues with the lowest possible detection and quantitation limits are the key metric."

David J. Borts, PhD, VDPAM  
Section Leader, Analytical Chemistry  
Veterinary Diagnostic Laboratory  
Iowa State University
Single-Provider Workflow Solutions: Customized to Ensure Your Success

The VetDrugs Explorer Collection is a single-provider solution built by scientists for scientists working in food safety laboratories around the world. This comprehensive collection provides a reliable, high-quality LC-MS/MS based solution for targeted quantitation of hundreds of veterinary drugs in a wide range of matrices.

Benefits of QuEChERS Sample Preparation

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Traditional Approaches</th>
<th>QuEChERS Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variability</td>
<td>High, depends on user expertise, sample, and matrix type.</td>
<td>Low, reproducible results for hundreds of vet drugs across multiple matrices.</td>
</tr>
<tr>
<td>Protocol Portability</td>
<td>Low, users implementing the method should have similar expertise and understanding.</td>
<td>High, one method can be implemented in multiple laboratories across different geographies</td>
</tr>
<tr>
<td>Convenience</td>
<td>All components ordered separately</td>
<td>All necessary components included</td>
</tr>
<tr>
<td>Cost Per Sample</td>
<td>Expertise dependent and labor intensive.</td>
<td>Economical and protocol driven. Users with varied expertise can achieve similar results.</td>
</tr>
<tr>
<td>Ease of Use</td>
<td>Depends on familiarity with the components, sample type, and user. Expertise required.</td>
<td>High. Can be implemented with ease across laboratories and users.</td>
</tr>
</tbody>
</table>

Sample Preparation
Convenient, Easy, and Effective

QuEChERS is a convenient and effective sample preparation approach for determining veterinary drug residues in a variety of matrices such as animal tissues, seafood, and milk. QuEChERS products are easy to use and reproducible, factors that are essential to all food safety laboratories.

Liquid Chromatography
Resolution, Speed, and More

Thermo Scientific™ Accucore™ LC columns coupled with the Vanquish UHPLC system take advantage of the system’s extended pressure capabilities and robustness, allowing high throughput LC-MS/MS analysis.
The Thermo Scientific™ Vanquish™ Flex Binary UHPLC system offers increased uptime, robustness, and reliability for every targeted quantitation workflow. From state-of-the-art binary high-pressure pumps to Thermo Scientific™ Viper™ fingertight fFitting connections, every component enables laboratories to address quantitation challenges with ease and confidence.

**Triple Quadrupole MS**

*Confident Quantitation*

To help address critical challenges in today’s food residue analysis, the TSQ Altis triple quadrupole mass spectrometer system delivers best-in-class sensitivity and speed, as well as the robustness and reliability required for fast and accurate quantitation of hundreds of analytes in a variety of matrices. Any molecule, any matrix, any user.

**Application Software**

*Five Clicks to Success*

TraceFinder software provides an extensive built-in compound database; the ability to screen and quantify analytes; streamlined data review; customized, editable report templates; and automatically generated reports—tailored for food safety applications. From data acquisition to the final report, TraceFinder software makes workflows fast and simple.

Steroid hormone Megestrol Acetate in milk sample at 0.04 ng/g, quantitation peak (left) with confirming ions (right).
Robust Targeted Quantitation Workflows for Triple Quadrupole MS

The VetDrugs explorer solution is a premium, comprehensive package that allows scientists to perform robust targeted quantitation workflows for multiclass veterinary drug residues in food matrices. All pre-configured methods are easily accessed in TraceFinder software.

Select from over 160 compounds from the compound database to automatically create a data collection and processing method for LC-MS/MS-based targeted quantification.

LC-MS/MS method flexibility allows you to easily create or edit pre-configured methods that include SRM transitions and retention times.

Data is acquired under optimal conditions for multiclass veterinary medicine residue analysis.

VetDrugs Explorer Robustness
Stable peak shape and response over 500 injections in bovine muscle extract.

Cyromazine

Ciprofloxacin

Sulfamethoxazole

Flunixin

Injection 1
Data is acquired under optimal conditions for multiclass veterinary medicine residue analysis. The color-flagging feature of TraceFinder software enables the analyst to quickly review and confirm results. After data review, use high-quality standard and custom reports to rapidly generate useful reports.

Users are able to quickly and easily develop customized methods using the TraceFinder software compound database, or can substantially reduce time to results using TraceFinder software’s preconfigured methods. Select one of the pre-tested and validated TSQ Altis mass spectrometer methods with LC conditions, then load and go.
**TSQ Series**
The TSQ Altis triple quadrupole mass spectrometer delivers best-in-class sensitivity and speed, as well as the robustness and reliability required for fast and accurate quantitation of hundreds of analytes in a variety of matrices. The Vanquish Flex Binary UHPLC system offers increased uptime, robustness, and reliability for every targeted quantitation workflow.

The Thermo Scientific™ TSQ Quantis™ triple quadrupole mass spectrometer delivers unprecedented robustness with best-in-class sensitivity for everyday use and for every user.

The Thermo Scientific™ TSQ Fortis™ triple quadrupole mass spectrometer helps increase productivity, with reliability and robustness, for labs focused on performing targeted quantitation.

**QuEChERs**
The quality of your results is highly dependent on all stages of your workflow. Sample preparation is a fundamental part in delivering high quality analytical results. Thermo Scientific QuEChERs products provide a wide range of easy to use and flexible sample preparation extraction and clean up solutions to ensure that you achieve the results you need when combined with the VetDrugs Explorer Collection.

**Accucore HPLC and UHPLC columns**
Accucore HPLC and UHPLC columns are designed to provide high efficiency peaks and high resolution separations. These solid core particle columns provide a robust platform for the most challenging matrices in food and beverage applications, delivering consistent results injection after injection. With a wide portfolio of 15 phase chemistries to maximize selectivity, these columns deliver fast separations without the high backpressures associated with a sub-2µm particle.

**TraceFinder Software**
TraceFinder Software is tailored for food safety applications and maximizes your lab’s productivity by enabling comprehensive reporting, and the development of expert methods regardless of user experience with the software.

Find out more at [thermofisher.com/VetDrugTesting](http://thermofisher.com/VetDrugTesting)