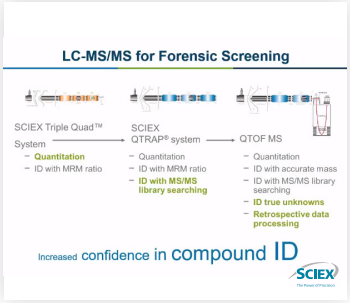
Webinar



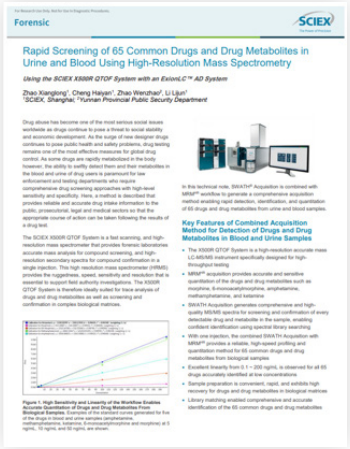
Streamlining forensic laboratory informatics for NPS screening and quantitation

With the sharp rise in the number of novel psychoactive substances (NPS) entering the market, forensics laboratories must have the best tools available to analyze them. LC-MS/MS is a highly sensitive and specific approach, that enables forensic toxicology laboratories to detect and identify, therapeutics and illicit drugs, as well as their metabolites.

From this webinar you will learn more about:

- Challenges for NPS screening
- LC/MS workflows for rapid identification and quantification of NPS
- How SCIEX OS Software for NPS detection is streamlining data processing

Technical note



Rapid identification and quantification of novel psychoactive substances in human whole blood using SWATH® Acquisition

Novel psychoactive substances (NPS) pose significant risks to public health and safety, therefore timely and comprehensive drug screening approaches are vital in the forensic laboratory. Building on the ability of liquid chromatography (LC) combined with tandem mass spectrometry detection (LC-MS/MS, LC-QTOF-MS) to accurately identify novel drugs in complex matrices, SCIEX have developed a comprehensive drug screening workflow for the analysis of NPS from whole human blood samples.

From this technical note you will discover:

- The key features of SWATH Acquisition for NPS identification and quantification
- How SWATH Acquisition is combined with SCIEX OS Software to create a comprehensive NPS screening workflow

Technical note

High sensitivity and dynamic range for 93-compound forensic panel analysis in urine

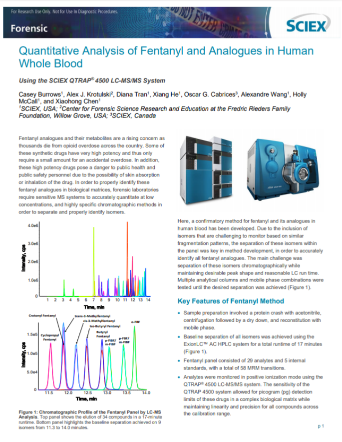
One of the challenges associated with NPS analysis is the range of concentrations observed. If the concentration of NPS analytes fall outside of the calibration range, the sample will need to be diluted so that accurate measurements can be made.

The SCIEX Triple Quad™ 5500+ LC-MS/MS System – QTRAP® Ready is a highly selective and sensitive method with a wide linear dynamic range. It enables quantitation across a wide concentration range, reducing unnecessary sample preparation and re-analysis.

From this technical note you will learn:

- The key features of this method for forensic studies
- The benefits of combining it with the High Energy Dynode (HED) detection system

Technical note


Forensic

Quantitative Analysis of Fentanyl and Analogues in Human Whole Blood

Quantitative analysis of fentanyl and analogues in human whole blood

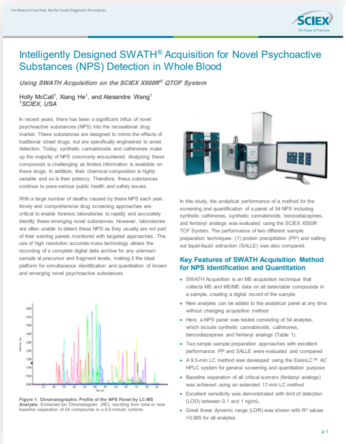
The potency of fentanyl analogues and their metabolites mean that only a small amount is required to cause an accidental overdose. As the opioid crisis continues to pose a significant threat, it is therefore vital that forensic laboratories can accurately identify these substances in biological matrices.

To achieve this, mass spectrometry (MS) systems and highly specific chromatographic methods are required to quantitate these opioids at low concentrations and separate isomers before identification, respectively.

From this technical note you will discover:

- The key features of the fentanyl method
- Why combining the QTRAP® 4500 LC-MS/MS System and the ExionLC™ AC System are beneficial for fentanyl analysis

Technical note


Intelligently Designed SWATH® Acquisition for Novel Psychoactive Substances (NPS) Detection in Whole Blood

Intelligently designed SWATH® Acquisition for novel psychoactive substances (nps) detection in whole blood

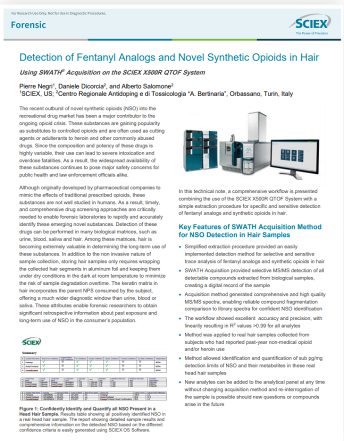
Novel psychoactive substances (NPS) have different chemical compositions and potencies compared to traditional street drugs. This makes detection and analysis challenging. High-resolution accurate mass spectrometry (HRMS) creates a complete digital data archive for unknown samples at precursor and fragment levels, making it an ideal platform for simultaneous identification and quantitation of known and emerging NPS.

SWATH Acquisition is an MS acquisition technique that collects MS and MS/MS data on all detectable compounds in a sample.

From this technical note you will learn more about:

- The key features of SWATH Acquisition for NPS identification and quantitation
- A study evaluating the analytical performance of the SCIEX X500R QTOF System for NPS screening

Technical note


Forensic

Detection of Fentanyl Analogs and Novel Synthetic Opioids in Hair

Detection of fentanyl analogs and novel synthetic opioids in hair

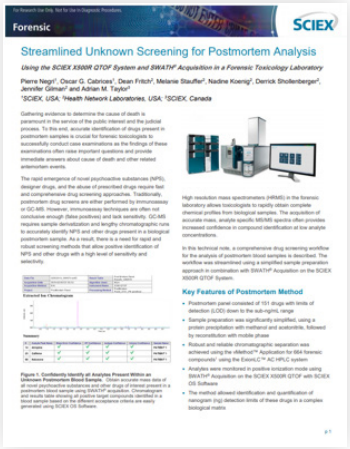
The variability in the composition and potency of novel synthetic opioids (NSO) compared to traditional opioids can result in severe intoxication and overdose fatalities. NSO are detected in many different biological matrices, however, hair is a particularly valuable sample used to detect long-term use.

The development of comprehensive screening methods will provide law enforcement agencies and health professionals with a clearer picture of long-term use drug use, their evolution in the consumer market and consumption trends in the specific populations.

From this technical note you will discover:

- The features of the SCIEX X500R QTOF System
- The benefits of combining it with a simple extraction procedure

Technical note



Streamlined unknown screening for postmortem analysis

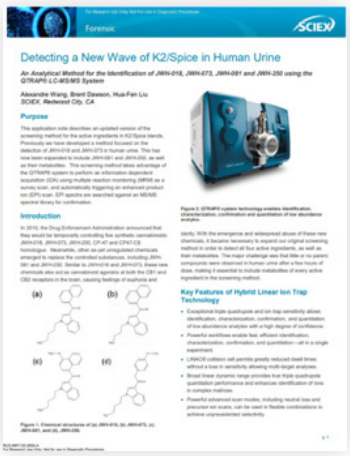
Accurate identification of drugs in postmortem samples enables forensic toxicologists to successfully determine the cause of death and it is beneficial for public interest and the judicial process. Traditional methods for post-mortem drug screening include immunoassays and gas chromatography mass spectrometry (GC-MS), however, their limitations have led to a search for more rapid and robust screening methods with higher levels of sensitivity and selectivity.

High-resolution mass spectrometry (HRMS) is a technique that can rapidly obtain complete chemical profiles from biological samples with increased confidence at low analyte concentrations.

From this technical note you will uncover:

- The key features of the postmortem method
- The benefits of SWATH Acquisition with the SCIEX X500R QTOF System for screening in postmortem analysis

Technical note



Detecting a new wave of k2/spice in human urine

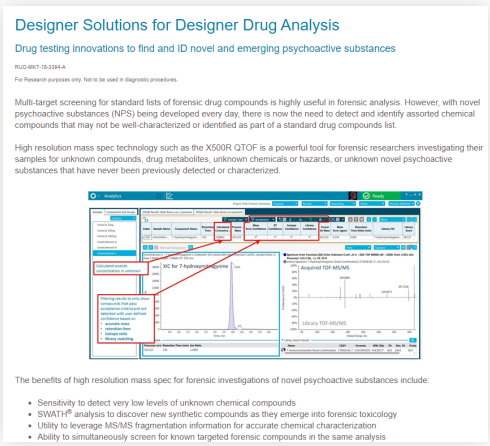
In 2010, the Drug Enforcement Administration (DEA) announced that they would be temporarily controlling five synthetic cannabinoids. However, unregulated chemicals - which act as cannabinoid agonists at CB1 and CB2 receptors - have since emerged to replace these controlled substances.

Parent drug compounds are metabolized within just a few hours; therefore they may only be present at low quantities in human urine samples. This short window is a major challenge for screening and has resulted in efforts to expand original screening methods so that they can detect the metabolites of every active ingredient.

From this technical note you will learn about:

- Hybrid linear ion trap technology
- An updated version of the screening method used for the active ingredients in K2/Spice blends

Website



Designer solutions for designer drug analysis

High-resolution mass spec technology such as the X500R QTOF System is a powerful tool for forensic researchers investigating their samples for unknown compounds, drug metabolites, unknown chemicals or hazards, or unknown novel psychoactive substances that have never been previously detected or characterized.

From this resource you will discover:

- The benefits of HRMS for forensic investigations of NPS
- Links to useful resources, educational content, products and services

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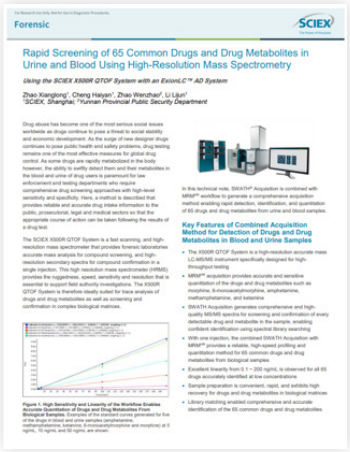
Technical note


Forensic

Rapid Screening of 65 Common Drugs and Drug Metabolites in Urine and Blood Using High-Resolution Mass Spectrometry

Using the SCIEX X500R QTOF System with an ExionLC™ AD System

Zhao Xiangjong[1], Cheng Haiyan[1], Zhao Wenzhao[2], Li Lijun[1]
[1]SCIEX, Shanghai; [2]Yunnan Provincial Public Security Department

Rapid screening of 65 common drugs and drug metabolites in urine and blood using high-resolution mass spectrometry

Drug abuse is one of the most serious social issues worldwide, as it continues to threaten social stability and economic development. Drug testing remains a highly effective measure of global drug control. However, the rapid metabolism of drugs in the body limits the ability to detect them and their metabolites with high sensitivity and selectivity.

The SCIEX X500R QTOF System is a fast scanning, high-resolution mass spectrometer that provides reliable and accurate drug intake information to support field authority investigations.

From this technical note you will learn more about:

- The key features and benefits of the combined acquisition method for drug and drug metabolite detection in blood and urine samples

Technical note


Forensic

Multi-panel detection of drugs and drug metabolites in hair samples using a comprehensive extraction method

Using Scheduled MRM™ Algorithm on the SCIEX QTRAP® 6500+ LC-MS/MS System

Pierre Negri[1], Samuele Scuratti[2], and Valentina Longo[2]
[1]SCIEX, US; [2]SCIEX, Italy; [3]Laboratorio di Chimica Clinica Settore Farmaco-Tossicologia APSS, Trento, Italy

Multi-panel detection of drugs and drug metabolites in hair samples using a comprehensive extraction method

Although urine and blood testing are the most common forms of drug testing, hair analysis has gained considerable attention over the years as a method enabling the determination of recent past drug use as well as the long term drug use through segmental analysis.

The combination of an easily implemented sample extraction procedure with the sensitivity of the SCIEX QTRAP® 6500+ LC-MS/MS System has enabled accurate identification and sensitive quantification of a wide range of chemically-diverse analytes.

From this technical note you will learn more about:

- The benefits of using this comprehensive workflow for the detection of drugs and their metabolites in hair samples

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