



LC-MS/MS Solutions for Comprehensive Cannabis Analysis

PIONEERING YOUR ANALYTICAL TESTING REQUIREMENTS



Your Partner for LC-MS/MS Solutions for Cannabis Testing Laboratories

Introducing the SCIEX Total LC-MS/MS Cannabinoid Analytical Solution



New to LC-MS/MS? **SCIEX is Your Partner!**

You want value and productivity

SCIEX instruments have been designed with the production laboratory in mind. Our cannabis method was developed to allow the analysis for potency, pesticides and mycotoxins in one injection. SCIEX also has a terpene method. All of your method requests for potency, pesticides and terpenes may be accomplished on one instrument.

You need application support

The cannabis testing laboratory has a wide range of applications and sample matrices which can be intimidating. SCIEX has experience with cannabis methods in a variety of matrices and provides on-site support to get your laboratory running samples as soon as possible. We know how to help laboratories new to LC-MS/MS get up and running!

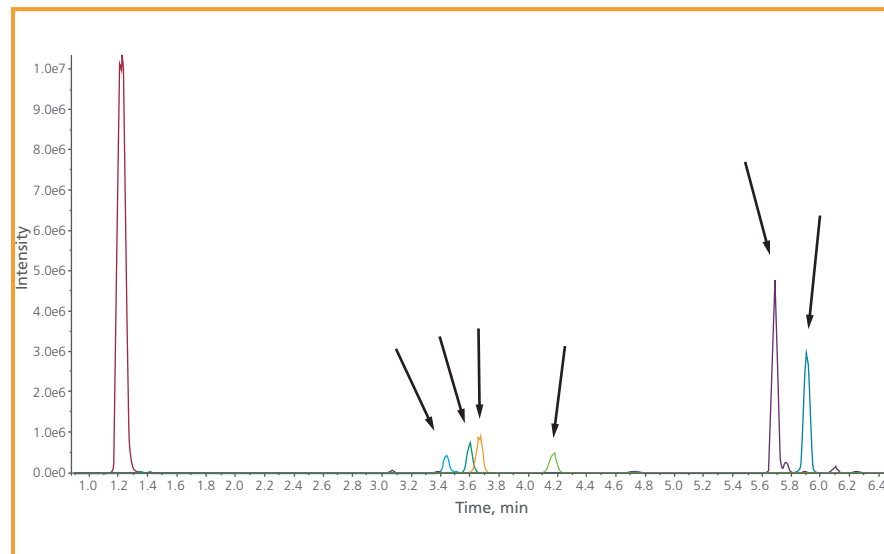
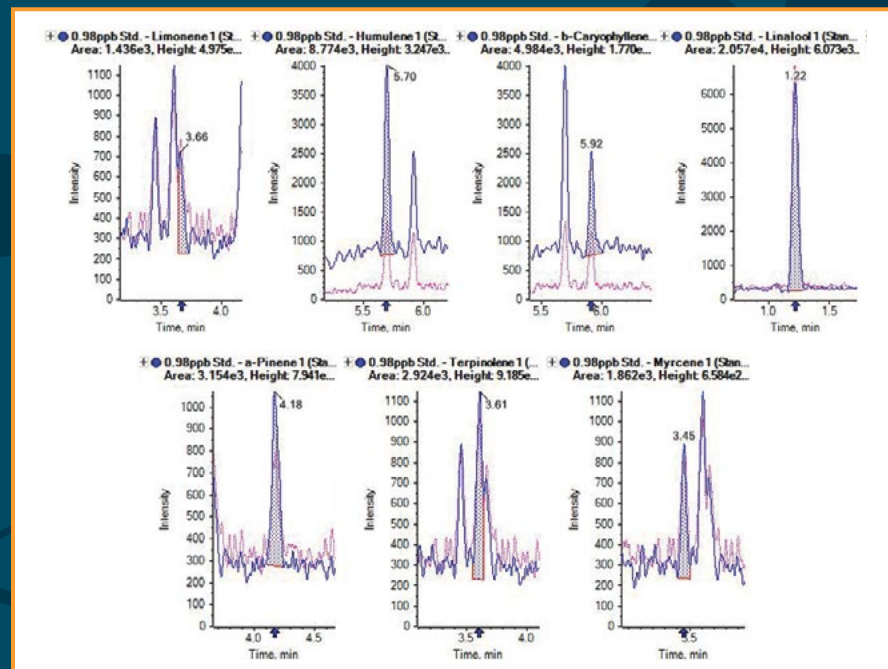
Why SCIEX?

- Instrumentation designed for standard, routine analysis
- SCIEX X500R QTOF System for analysis of unexpected compounds such as adulterants
- Ruggedness and Reliability. SCIEX instruments are extremely rugged and reliable and have proven performance for complex matrices
- Developed Methods. SCIEX has created methods for potency, pesticides and mycotoxins in one injection for improved productivity. SCIEX has an LC-MS/MS terpene method so that GC/MS is not required in order to meet all of your customers analytical requests.
- SCIEX Support. We work closely with the laboratory to get your method running, even if the lab is new to LC-MS/MS.

Terpene Profiling

At least 200 terpenes have been identified in *Cannabis sativa*. The terpenes present have a well-defined role in the perceived aroma and user preference for specific cannabis strains. Sensitive, selective, accurate and economical analytical methods are needed to assess these key compounds.

The SCIEX Triple Quad™ 3500 System with APCI platform is designed to handle quantitative terpene analysis. Historically, terpenes have been analyzed by GC-MS due to their predominantly aliphatic composition. However, labs performing routine testing of cannabis will need to test potency and for pesticides and herbicides once regulations are established. With SCIEX LC-MS/MS it is possible to analyze all of the compound classes with one instrument.



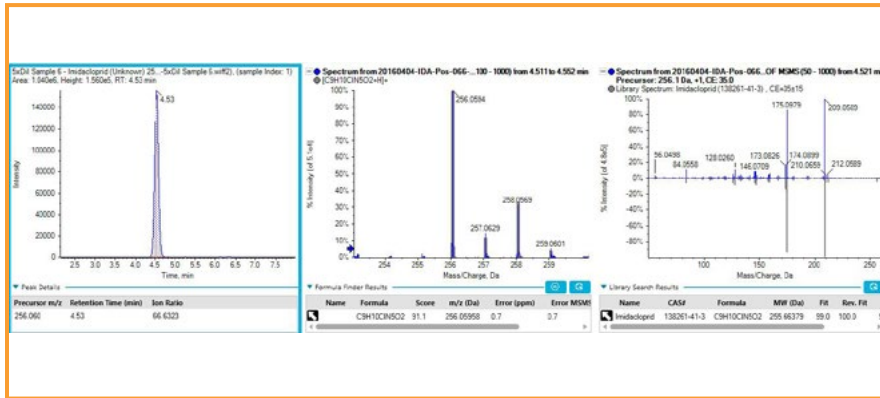
Sample chromatogram of the terpenoids evaluated in this method. Resolution of isobars was critical to the success of this application.

Compound	S/N at 1 ppb	%CV at 1ppb	r
Limonene	20	6.3%	0.997
Terpinolene	34	2.9%	0.998
α-Pinene	34	4.4%	0.996
Myrcene	31	3.9%	0.999
Linalool	220	4.2%	0.999
Humulene	70	5.5%	0.999
β-Caryophyllene	37	8.2%	0.999

Sensitivity, repeatability, and linearity from 1 to 1000 ng/mL using the *ScheduledMRM™* method

Pesticide and Mycotoxin Screening and Quantitation

Quantitate and identify with ultimate confidence



Pesticide screening – positive hit for imidacloprid in cannabis sample extract

Cannabis has the potential to be attacked by pests or pathogens resulting in treatment with insecticides, acaricides, fungicides, and potentially other crop protection agents, which can harm cannabis consumers, particularly medicinal cannabis users who may have a compromised immune system.

The new SCIEX X500R QTOF Accurate Mass System with intuitive SCIEX OS Software provides sensitive and comprehensive screening with full scan MS/MS for spectral library searching, tools for automatic formula finding, and isotope matching for the ultimate confidence in identification. The system can also deliver triple quadrupole-like quantitation using *Scheduled*MRM-HR.

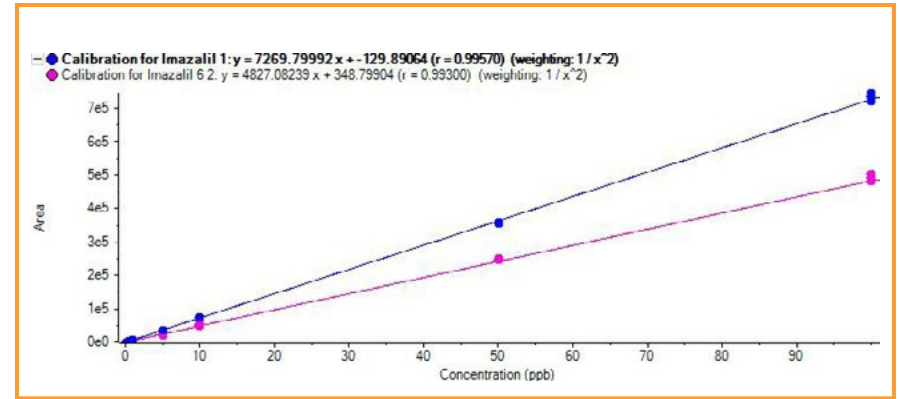
Component	Actual Conc. (ppb)	Mean	% CV	Accuracy
Imidacloprid TOFMS	0.1	0.082	13.4	82.3
Imidacloprid TOFMS	0.2	0.188	4.36	94.2
Imidacloprid TOFMS	0.5	0.539	4.02	108
Imidacloprid TOFMS	1.0	1.097	6.08	110
Imidacloprid TOFMS	2.0	2.176	0.96	109
Imidacloprid TOFMS	10.0	9.717	4.40	97.2

TOF-MS XIC of 256.0596 for 0.1ppb imidacloprid

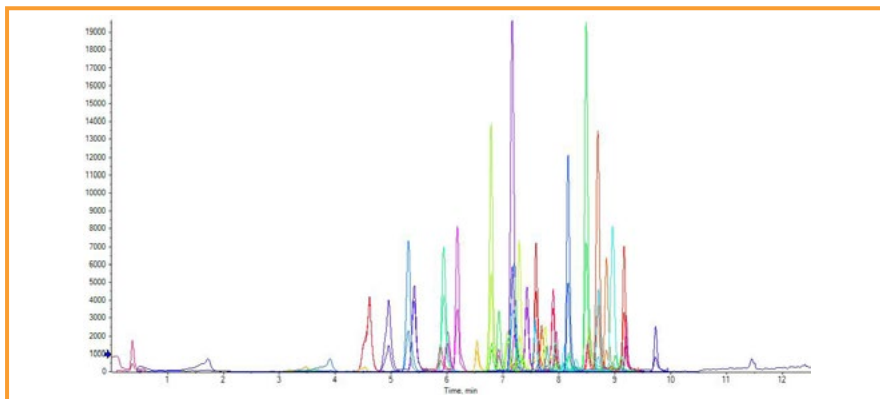


Pesticide Quantification

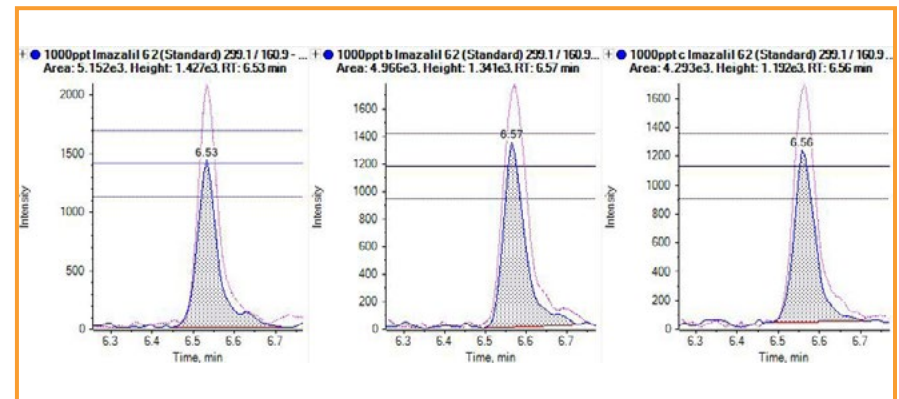
Pesticides and other contaminants are of high concern in the growth and consumption of cannabis and cannabis products. Whether meeting state requirements or certifying a product, low-level detection and quantification are crucial for routine testing to deliver reliable and accurate data. Using *ScheduledMRM™* acquisition methods, large panels of pesticides can be analyzed in one injection, delivering the quantitative results you'd expect from SCIEX instrumentation.



○ Calibration curve of quantifier and qualifier ions for imazalil



○ sMRM of Pesticides in cannabis sample extracts



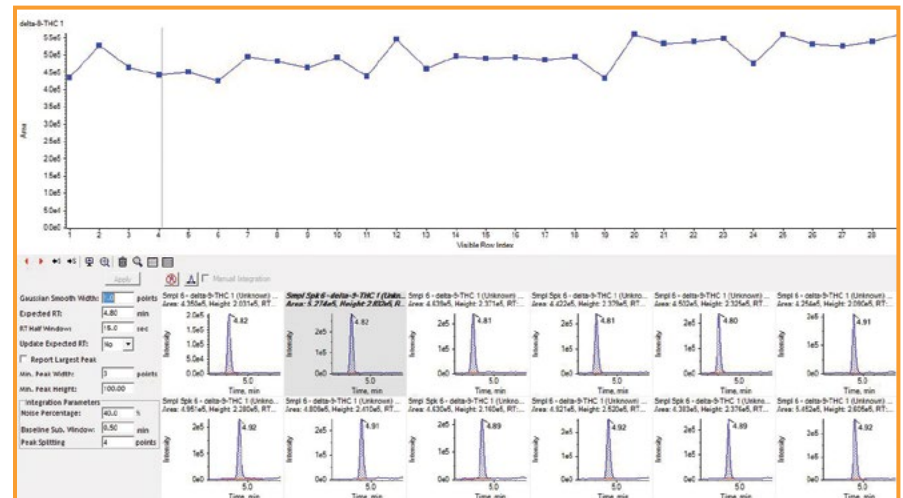
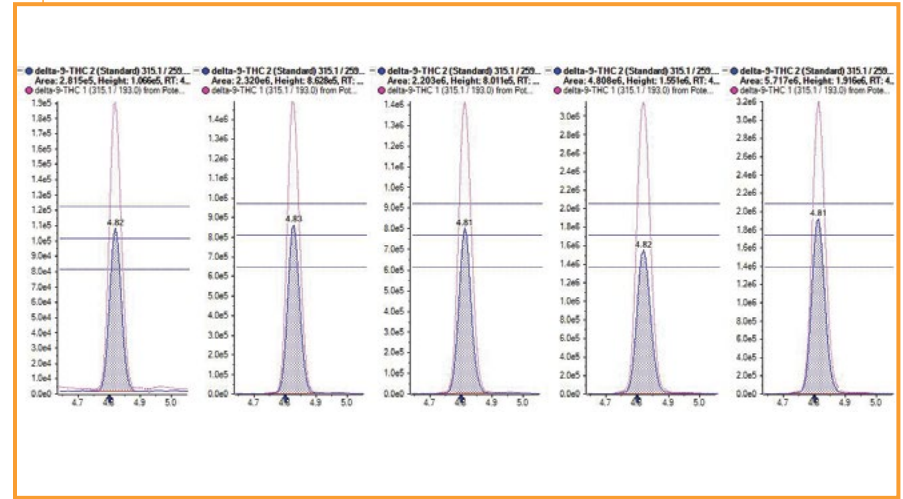
○ 1ppb Imazalil standard with ion ratios

Potency Testing

The most important part of cannabis testing is accurate quantification of cannabinoid concentrations in cannabis samples. SCIEX ExionLC™ UPLC paired with Phenomenex analytical columns provides the solutions to deliver the best results for a large panel of cannabinoid psychoactives.

Cannabis testing demands ruggedness for throughput, and the SCIEX suite of instruments use industry standard Turbo V™ Ionization Source which results in minimal down time.

○ Δ-9-THC peak area RSD=8% after 450 consecutive injections of undiluted cannabis extracts



Essential for Accurate and Reliable Cannabis Analysis

X500R QTOF System

The X500R provides the ultimate solution for laboratories that need to screen for unknown compounds while still achieving triple quadrupole quantitation.



Triple Quad™ 3500 LC-MS/MS System

The 3500 LC-MS/MS is our most affordable platform and provides an exceptional entry point into LC-MS/MS analysis for labs new to the industry.



QTRAP® 6500+ System

The 6500+ instrument provides the ultimate in sensitivity and performance. Sensitivity allows for larger dilutions and less matrix interferences. As well as, superior compound identification to a standard triple quadrupole instrument.



Your Success is Our Success

We take it personally

As a SCIEX customer you have access to a world-class customer support organization. Wherever you are, we're there with you as a trusted partner to answer questions, provide solutions, and maximize lab productivity.

Our customer support organization has access to the latest product updates, software revisions, methods and repair procedures to make sure that you stay on top of your game.

When you have questions, we have answers.

Learn more at sciex.com/customersupport, or locate your local account representative at sciex.com/contactus

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