

**November 7, 2024 (7:45-8:30)**



**VENDOR SEMINAR:**

## **Precision and innovation: Inert columns in mycotoxin and pesticide analysis & automated alkaloid analysis in honey**

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### **Honey, we shrunk the analysis! - A case study on the automation and miniaturization of the analysis of pyrrolizidine alkaloids in honey**

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The demand for automation in laboratory processes is growing rapidly due to workforce shortages and significant advancements in robotics. Concurrently, the drive towards miniaturization poses unique challenges. Rising chemical costs and the imperative for green chemistry, such as reducing waste, underscore the need for innovative solutions.

One pertinent example is the detection of pyrrolizidine alkaloids (PAs) in honey. The investigation of PAs in honey is crucial due to their hepatotoxic, genotoxic, and carcinogenic properties, which can pose significant health risks to consumers. As natural contaminants originating from certain plant species, PAs can enter the food supply through honey, necessitating monitoring.

In this seminar we would therefore like to present a case study and a solution for automation and miniaturization for the detection of PAs from honey.

### **Unlocking precision: The power of inert columns in mycotoxin and pesticide analysis**

*Tina Brandscher, Restek GmbH, Schaberweg 23, 61348 Bad Homburg v.d.H. Germany*

In Mycotoxin and Pesticide analysis as well as in plant toxin analysis, screening methodologies are normally used. In these multi-compound analyses, the peak form is crucial to identify and quantify your analytes of interest.

Those multi-compound screenings include a variety of chemical classes with different and sometimes difficult behaviour. For example, a lot of metal-sensitive compounds tend to interact with active spots of the metal surface in the analytical pathway of an LC-Instrument or are even forming chelates with these surfaces. Most of these active surfaces are in the column and not in the instrument itself, especially in the frits at the beginning and the end of the column.

In this presentation, we are showing the benefits of a CVD passivation technique to minimize these interactions from the beginning, making priming of the analytical system with either matrix of expensive reference standards obsolete.