



"By implementing the downscaling process enabled by the ThermELUTE system, we achieved time savings of up to 80%. At the same time, the significantly increased chromatographic sensitivity opens up new possibilities — even for challenging matrices such as cannabis flowers."

Kevin Burghardt, Head of Quality Control, Analytisches Zentrum Biopharm GmbH



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MYCOTOXIN ANALYSIS

FASTER, SMARTER, GREENER

Traditional clean-up workflows are time-consuming and solvent-intensive.

About the Company

Analytisches Zentrum Biopharm GmbH is a service provider for the pharmaceutical and chemical industries, operating in compliance with GMP, GCP, and GLP principles.

Location: Berlin, Germany

Number of employees: 35



Application & Challenge

The goal was to establish an efficient and cost-effective sample preparation workflow to increase the signal sensitivity for aflatoxins and ochratoxin A.

Lösung & Implementierung

In collaboration with LCTech, a comprehensive concept was developed to optimize sample cleanup based on the SMART columns used in the respective workflow. Available chromatographic options were deliberately leveraged to establish an efficient, scalable, and robust method.

A key focus was the validation of a suitable method for fatty matrices, in particular cannabis flowers — without the need for additional technical derivatization accessories.

As part of the concept development, the individual cleanup steps were systematically analyzed and adapted, ensuring the overall workflow could be designed to be both analytically powerful and economically attractive. The method was optimized along essential process parameters, including extraction, matrix reduction, and downscaling potential. As a result, high flexibility could be achieved for different sample types and varying laboratory conditions.

Benefits & Results

Implementing the concept offers several key advantages:

- **Time savings** through optimized and shortened process steps
- **Improved quality** due to reduced matrix effects, improved peak shapes, and increased reproducibility
- **Cost reduction by up to a factor of 3**, particularly due to lower consumption of solvents and laboratory consumables
- **Increased chromatographic sensitivity** through cleaner matrices, improved signal-to-noise ratio, and more efficient enrichment
- **Greater flexibility** through downscaling with reduced sample and solvent volumes and easier adaptation to new matrices

Through this combination of technological know-how and structured method design, a high-performance, cost-efficient, and future-ready approach is created for the analysis of complex, fatty matrices.



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