

Fully Automated Mycotoxin Detection in the ppq-Range

LCTech's robotic system FREESTYLE ThermELUTE enables with its fully automated sample preparation and direct connection to a HPLC system a sample throughput of more than 500 samples per week. The process is done without any manual working steps from extract to the ready chromatogram.

Manual sample preparation is tedious, laborious, and cost-intensive. In combination with a HPLC system the robotic system FREESTYLE ThermELUTE enables fully automated sample preparation and analysis of the mycotoxins Aflatoxin B1, B2, G1, G2, M1 as well as Ochratoxin A and Zearalenone in all regulated matrices.

When developing this system LCTech, specialist in the area of automated sample preparation, has followed the approach of miniaturizing the sample preparation process. Consequently the ThermELUTE is processing immunoaffinity columns with a size of only 3.5 cm, which in turn considerably reduces the processing time as well as the amount of sample and solvent.

The clean-up step itself is performed via thermal denaturation. After being washed, the loaded immunoaffinity column is heated whereby the bond between antibody and toxin is broken. The eluate of the immunoaffinity column is directly and quantitatively eluted from the SMART column, as sample loop partial filling, into the injection port of the LC unit. After derivatisation of the aflatoxins B1 and G1 the eluate is analysed. At the same time the FREESTYLE ThermELUTE begins to process the next sample. With this parallelisation of the two steps, sample preparation and analysis, the sample throughput can be increased enormously.

Moreover, the sensitivity is also drastically increased, because losses through evaporation or adsorption effects are excluded, the complete eluate is injected, and the adjustment to the HPLC mobile phase is omitted. Without special measures or further processing steps the user is able to always measure within the lower ppt-range of the European limits (ppq-range for Aflatoxin M1), even for baby food and to process its application in conformity to EU regulations.



System for fully automated sample prep and analysis of mycotoxins:
FREESTYLE ThermELUTE



Gripper injects SMART column in ThermELUTE module.

About LCTech GmbH

LCTech GmbH is based in Dorfen, Germany. Since 1998, it has been developing and supplying products and methods for the preparation and analysis of food, animal feed, forensic and environmental samples. The product range includes both semi and fully automated sample preparation systems as well as consumables utilised in the analysis of contaminants and residues.

LCTech is represented worldwide through a well-developed distributor network and also acts as the exclusive distributor for PICKERING Laboratories in Europe, Africa Middle East and the CIS-countries.

Worldwide, many customers – including governmental and contract laboratories focusing on food and feed analysis, and also those working in the pharmaceutical industry or research – equally appreciate both, the modern and efficient products of LCTech as well as its responsive and competent customer support. More information is available online via www.LCTech.de.

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