UVE™

UV Derivatization Module

LCtech

Visit us at wwww.Lctech.de!

What LCTech does

supplies innovative products and methods for the preparation and analysis of food, feed and environmental samples.

UVE – UV Derivatization Module

- Photochemical post-column derivatization of aflatoxins in a special reactor loop with UV light
- Result: Intense peaks for aflatoxins B1 and G1
- AOAC accepted methodology

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UVE – UV Derivatization Module

- Most efficient technique for the detection of aflatoxins in foods and animal feeds

„The accurate and highly sensitive proposed method offers several advantages in terms of simplicity, rapidity and efficiency."

"Therefore, the proposed method is well suited to satisfy the demands for accurate and sensitive detection of aflatoxins with minimal sample preparation and cleanup steps."

Conclusion of a comparison of several techniques for aflatoxin dectection in foods and animal feeds

Muscarella, M. et al.; Food Additives and Contaminants, Vol. 26, No. 10, October 2009, 1402-1410

UVE – UV Derivatization Module

- Comparable to electrochemical derivatization with Cobra Cell

„The comparison of the 2 post column derivatization techniques demonstrates that both approaches, bromination and irradiation by UV light, are suitable for the determination of aflatoxins in various food and animal feed matrixes.”

Conclusion of a comparison of the Kobracell technique (bromination) to the UVE technique (photochemical derivatization through irradiation by UV light)

A. Papadopoulou-Bouraoui, J. Stroka, E. Anklam,
J. AOAC Int. Vol. 85, No. 2, 2002, 411-416

UVE – UV Derivatization Module

Handy device

Special design and fluorocarbon coil

Robust steel housing to meet laboratory requirements

High light transmission

254 nm UV low pressure lamp with cooled reflector tube

Long term stability of lamp and coil

Well-priced UV lamp can easily be exchanged

Analysis of Aflatoxins

Sampling

Homogenization

Extraction

Cleanup of extract

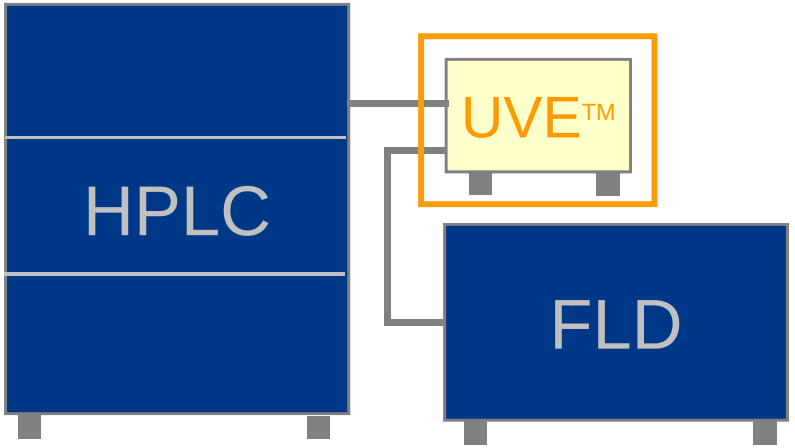
Chromatography

Derivatization

Detection

Interpretation

Easy handling:
Simply put the UVE between HPLC device and detector, switch it on – ready to use!



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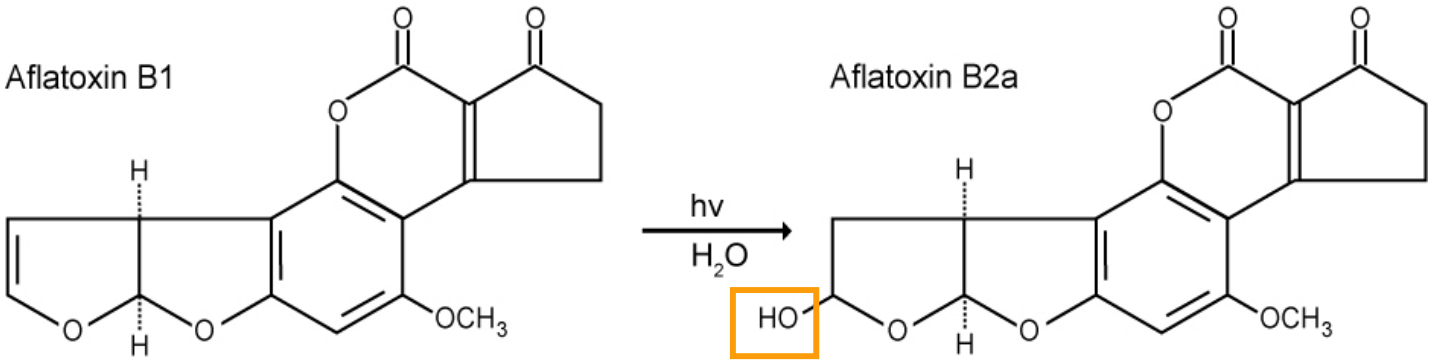
Derivatization Mechanism

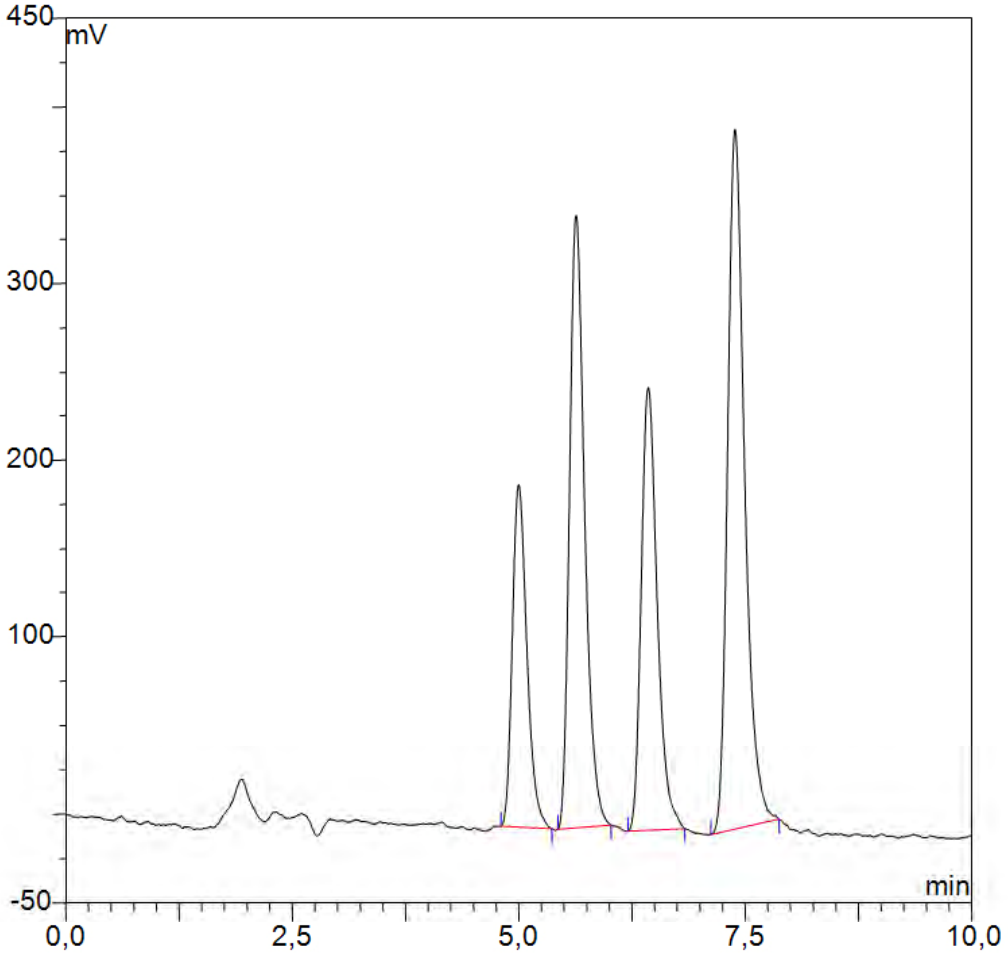
- What actually happens:



Aflatoxins B1 and G1 are transformed to stable fluorescent derivatives

Result: Intense peaks for aflatoxins B1 and G1

Derivatization Mechanism



With UVE: High derivatization performance and no significant band spreading

UV derivatization results in clear peaks for all aflatoxins

It shows short run times (B1 at 7.7 min)

UVE – UV Derivatization Module

- Detection
  - Fluorescence
  - λ Excitation B/G 365 nm
  - λ Emission B 440 nm
    G 425 nm

UVE - Technical Data

CE certified	
UVC lamp	254 nm
Reactor coil	Special
Dimensions	14,5 x 27 x 8,5 cm (w*d*h)
Power input	50 W
Weight	3 kg
P/N	10519 (230 VAC – 50 Hz) 10742 (90-126 VAC – 50/60 Hz)

UVE at a Glance

- Ultra simple installation: put the UVE between the HPLC and the fluorescence detector, switch on, ready to use
- Easy handling
- Nor reagents needed: neither iodine nor HNO_3/KBr are used
- Verification can be conducted by simply switching off the reactor
- Lowest follow-up costs

= Handy and clever device at an unbeatable price

Further LCTech Products

- Immunoaffinity column AflaCLEAN for sample clean-up
- Eliminates interfering matrix substances

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