Mycotoxin Analysis with Post-Column Derivatization

Solutions for

- convincingly sensitive and selective analysis
- easy handling,
- exciting chromatograms, and
- ultimately affordable setup of methods

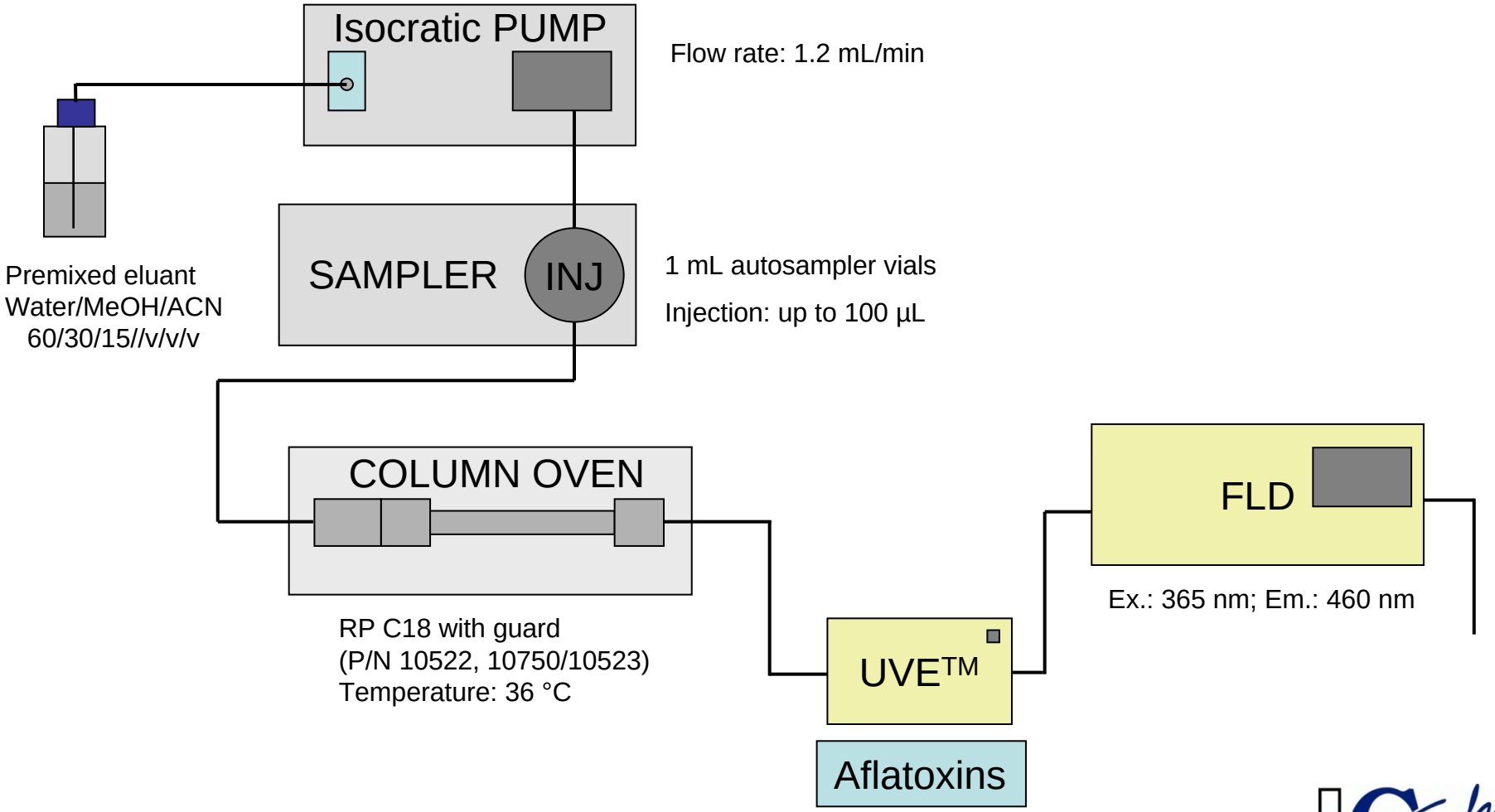
Visit us at www.Lctech.de!

Aflatoxins B1, B2, G1, G2: Story

The following slides show the very affordable and low requirements starting the analysis of Aflatoxins by using HPLC:

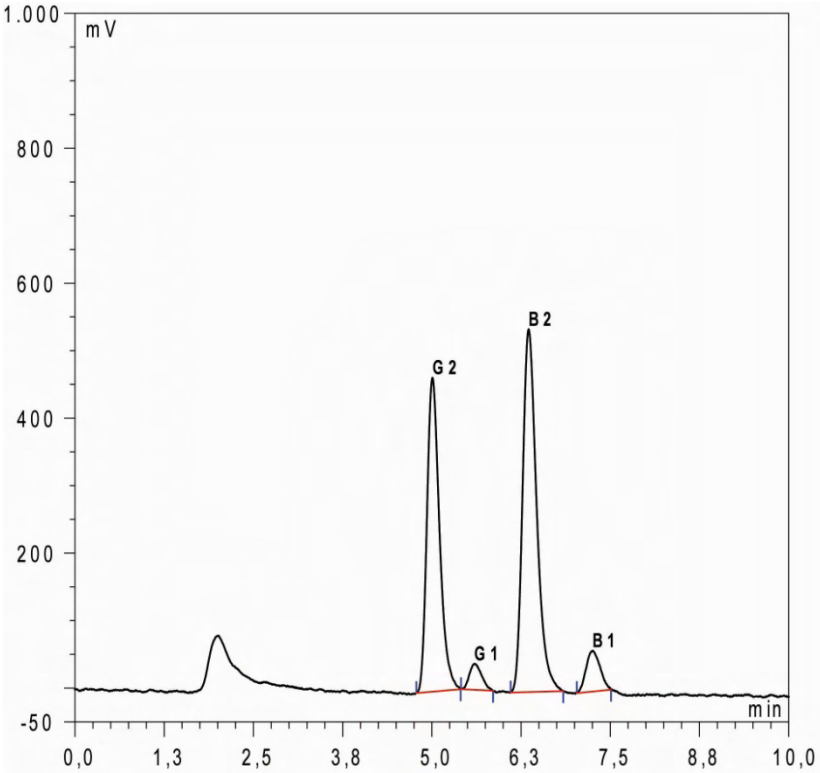
- An isocratic HPLC with photochemical reactor UVE™ is needed only! The total investment is very low!
- Best separation and resolution possible.
- B1 as the last peak elutes within 8 minutes (using the recommended equipment/parameters including the LCTech analytical column); compared to many methods needing between 11 to 20 minutes per run, the method is comparatively short.
- The whole method can be easily handled by any medium-skilled HPLC user (no special knowledge needed, which is still necessary to run a LC/MS).

Aflatoxins: Requirements

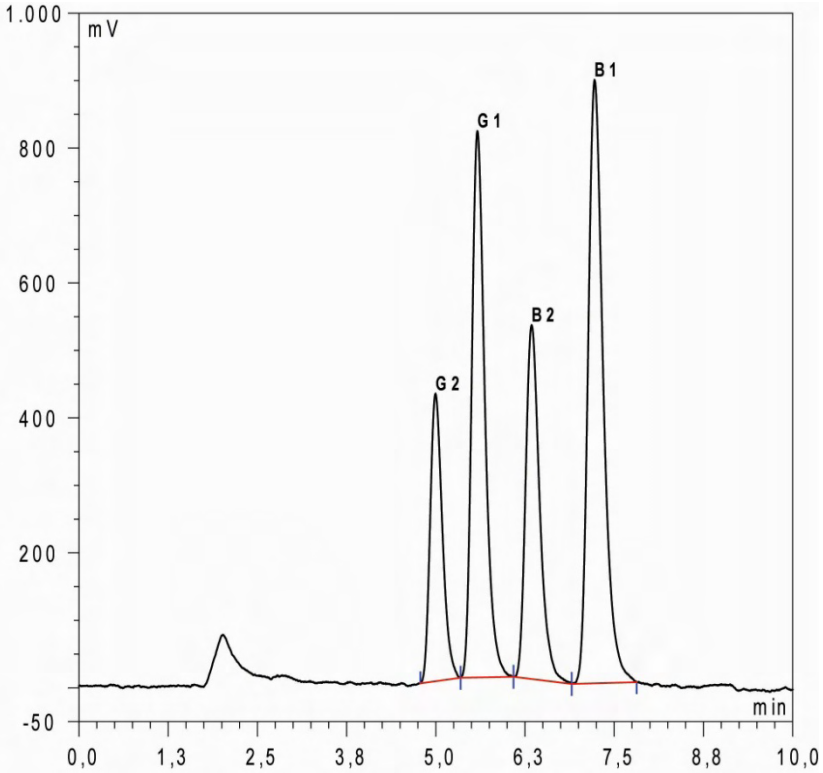


Aflatoxins: Chromatogram

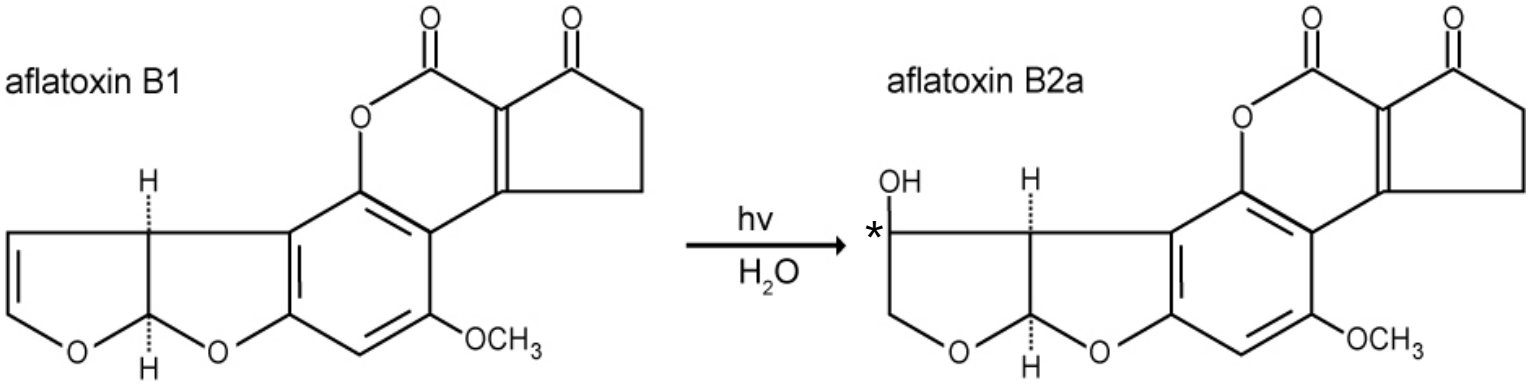
Without UVE



With UVE



Aflatoxin B1: Derivatization Mechanism



* hv 254 nm; H_2O from eluant

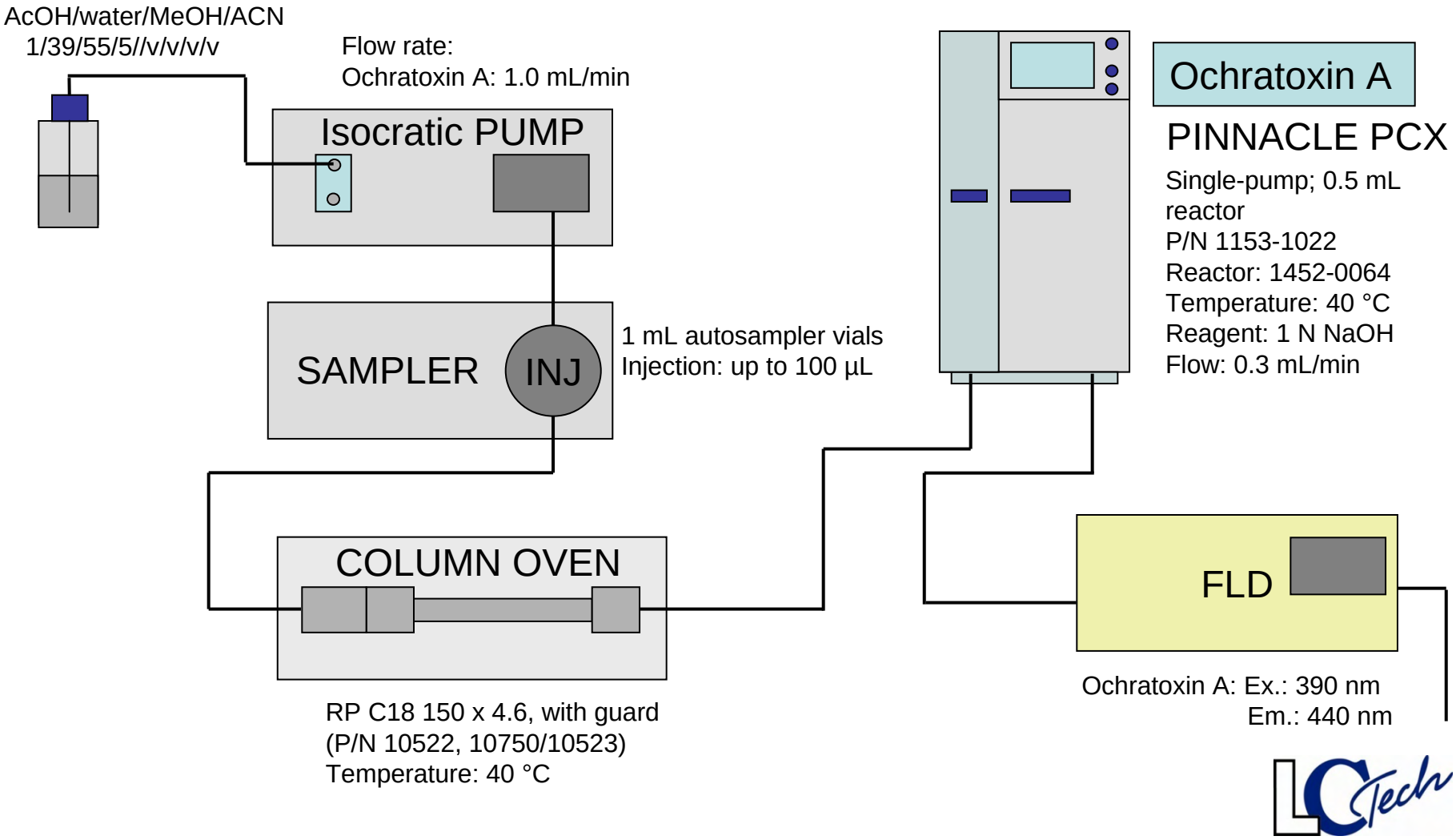
*

Ochratoxin A: Story

The analysis of Ochratoxin A demands similar requirements as needed for Aflatoxin analysis:

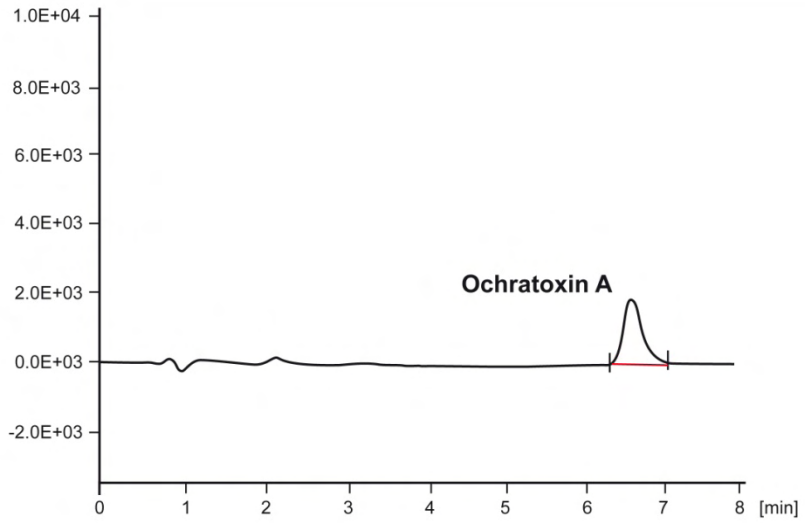
- **P**remixed eluant & isocratic pump & FLD.
- A PINNACLE PCX post-column derivatization system is recommended. If customer wants to analyse other toxins as well, the right PINNACLE PCX system should be choosen then. Ask LCTech!
- The same analytical columns is used as for the Aflatoxin analysis.
- Easy to handle application.
- The whole method can be easily handled by any medium-skilled HPLC user (no special knowledge needed, which is still necessary to run a LC/MS).

Ochratoxin A: Requirements

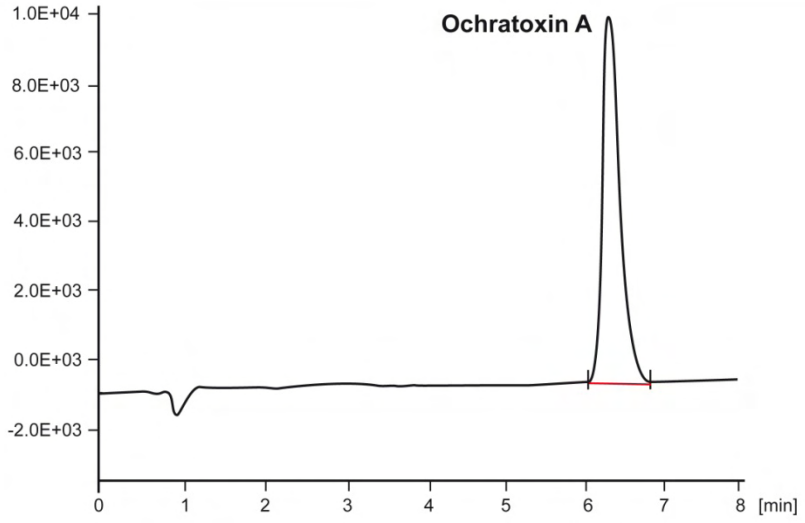


Ochratoxin A: Chromatogram

Without Post-Column Derivatization



With Post-Column Derivatization



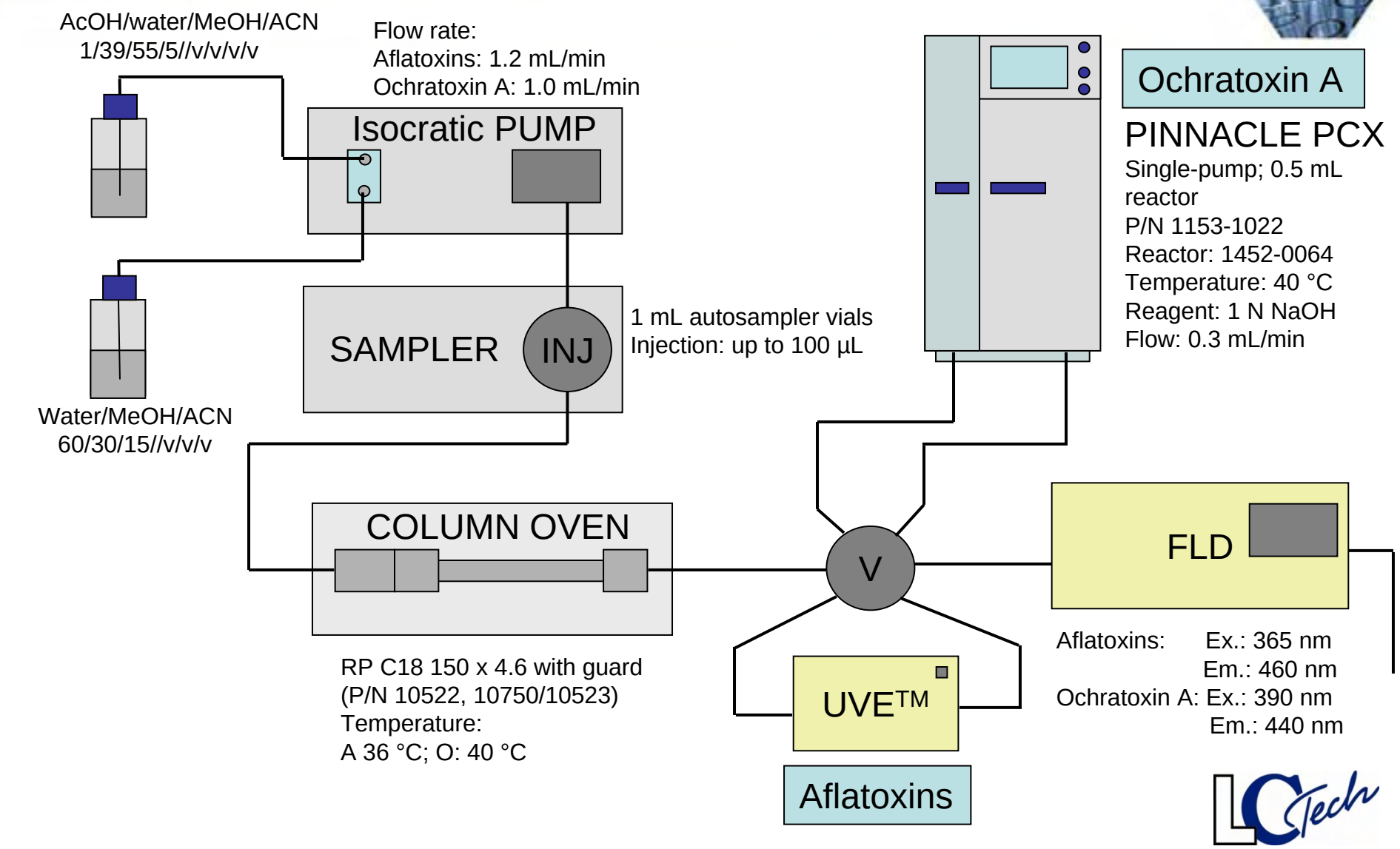
Aflatoxins and Ochratoxin A: Story

The set up of instrumentation for both type of toxins is so easy!

- Use two similar premixed eluants with a valve for selection of the appropriate eluant
  & Use one isocratic pump only (can be used without a lot of flushing time, because the eluants for both toxins are similar
  & Use a valve to select the appropriate post-column derivatization device (either UVE or PINNACLE)
  & Use the same FLD
- Both types of toxins represent a very high percentage of all mycotoxin analyses conducted

THAT‘S ALL!

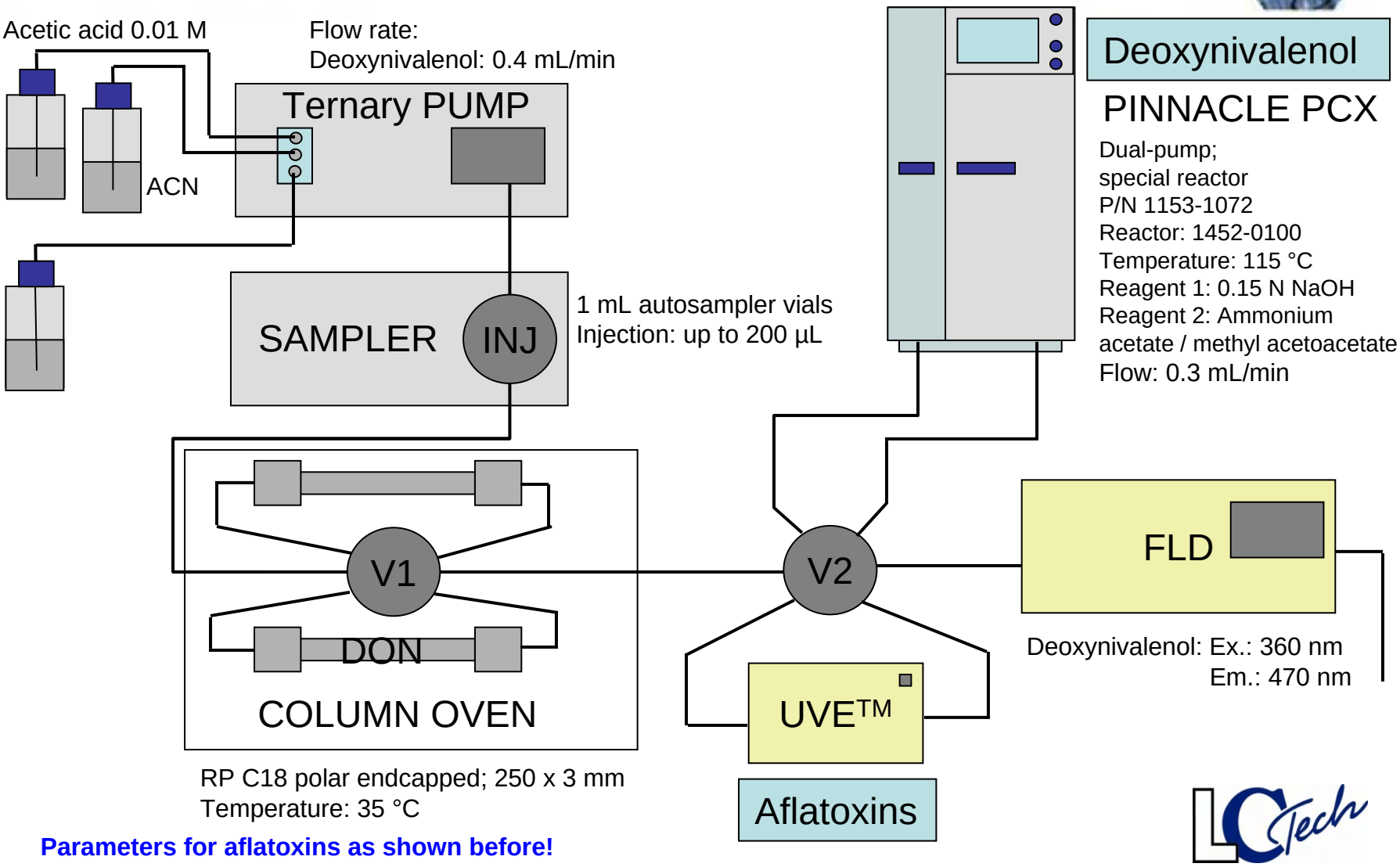
Aflatoxins and Ochratoxin A: Requirements



More Combinations for Mycotoxin Analysis …

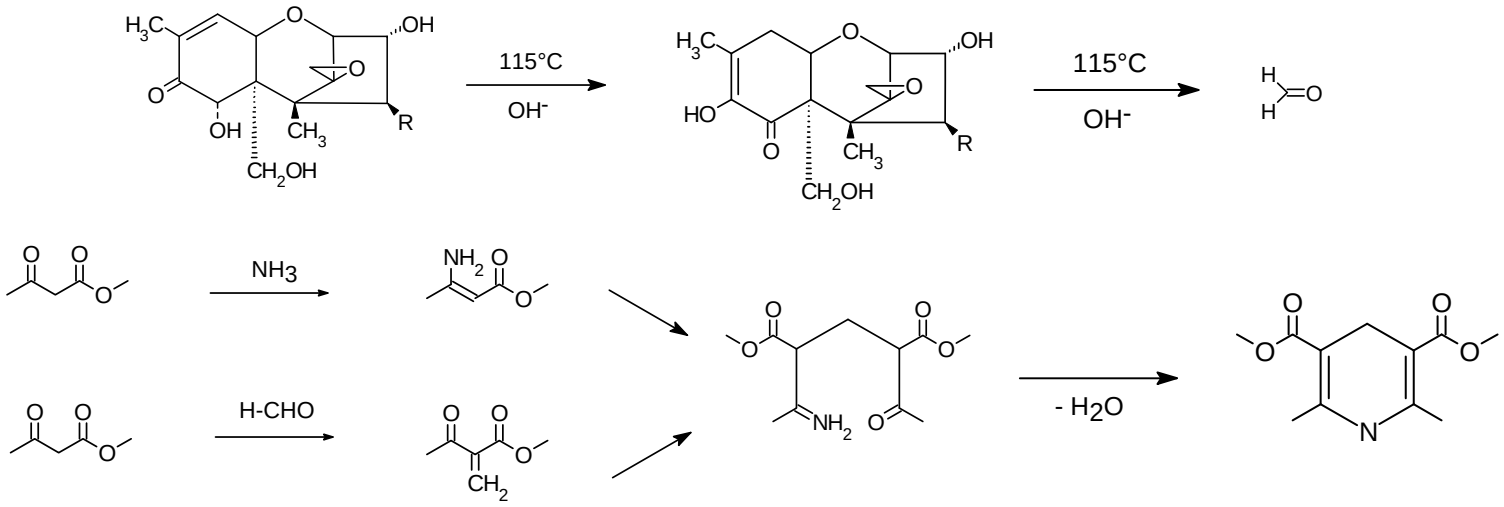
On the following slides you will get more information about the analysis of some different mycotoxin combinations with post-column derivatization.

Aflatoxins and Deoxynivalenol: Requirements



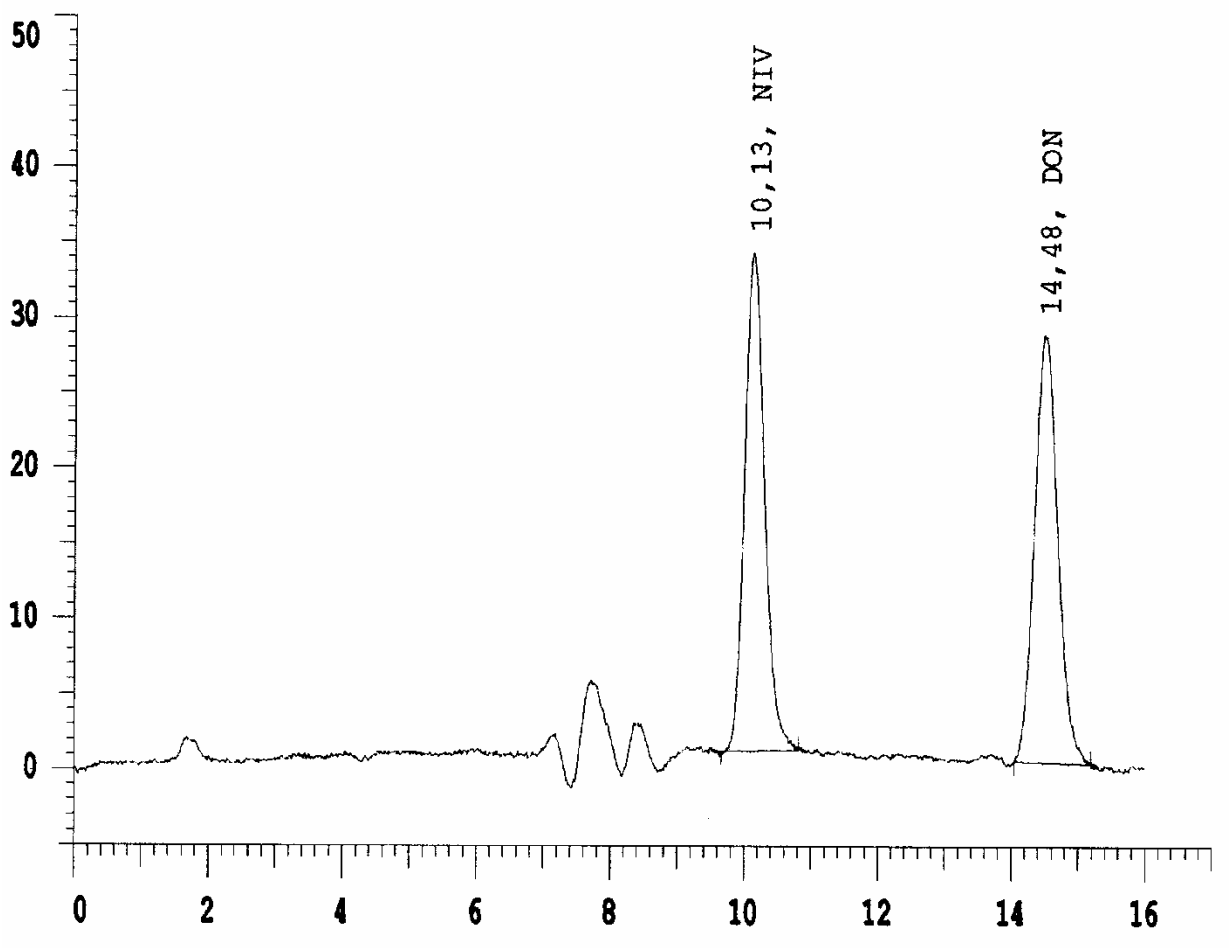
Parameters for aflatoxins as shown before!

Deoxynivalenol: Derivatization Mechanism



Deoxynivalenol: Chromatogram

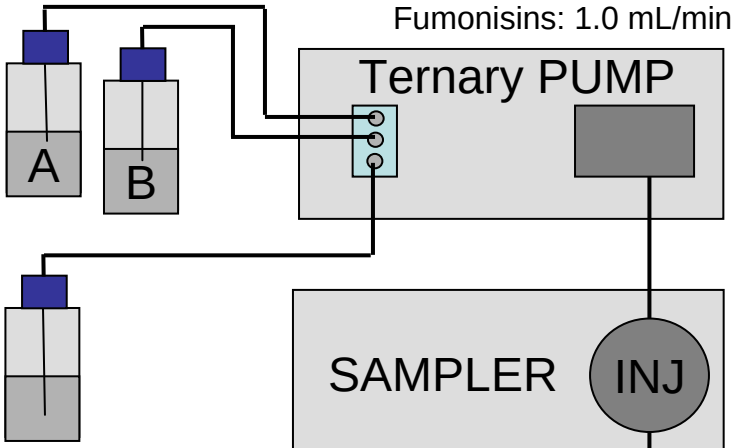
Chromatogram of a DON/NIV standard (50 ng each)



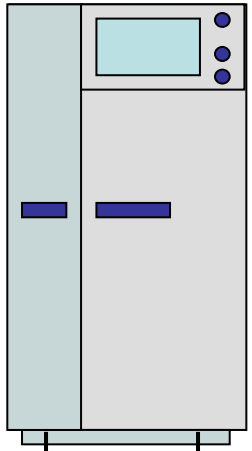
Aflatoxins and Fumonisin: Requirements

A: Phosphate buffer/MeOH/ 65/35
B: Phosphate buffer/MeOH/ 80/20

Flow rate:
Fumonisins: 1.0 mL/min



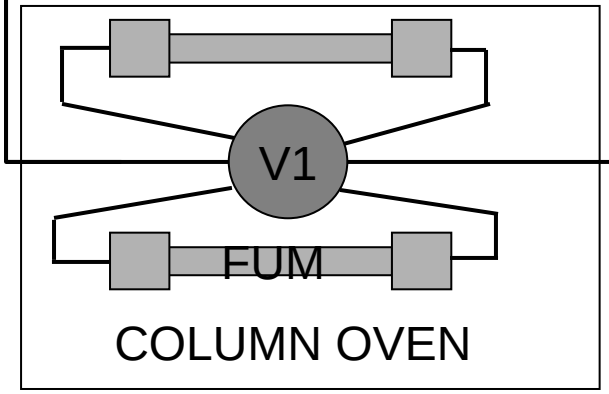
1 mL autosampler vials
Injection: up to 20 µL



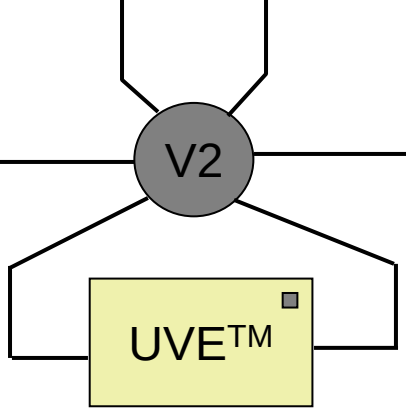
Fumonisin

PINNACLE PCX

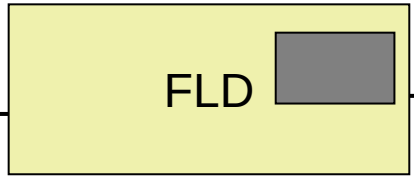
Single-pump;
0.15 mL reactor
P/N 1153-1012
Reactor: 1452-0094
Temperature: 45 °C
Reagent: OPA/Thiofluor
Flow: 0.3 mL/min



RP C18; 150 x 3 mm
Temperature: 35 °C



Aflatoxins

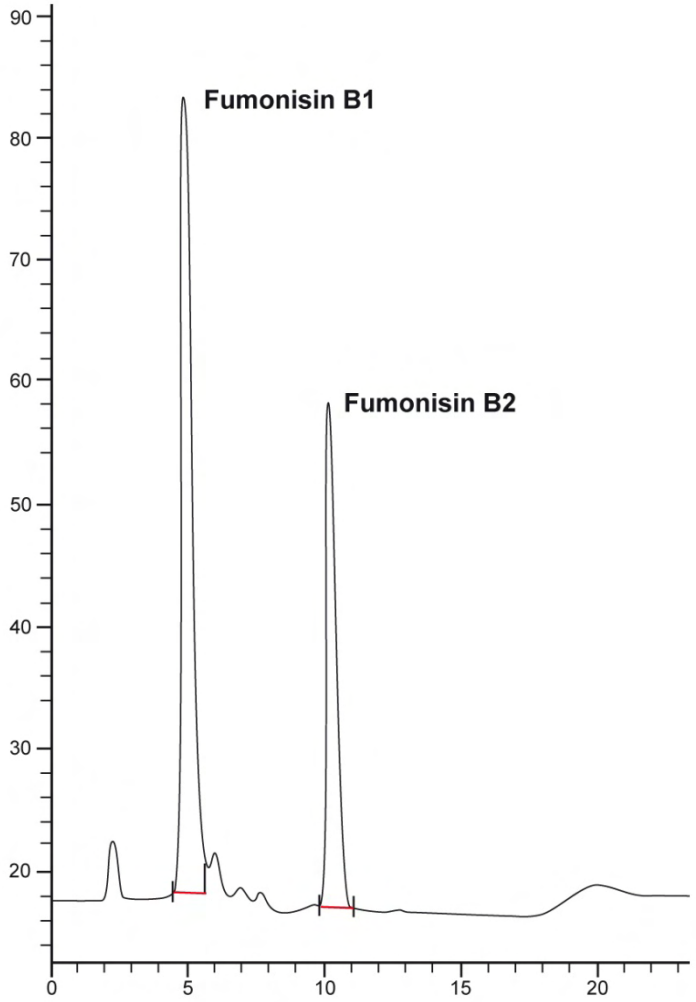


Fumonisin: Ex.: 330 nm
Em.: 465 nm

Parameters for aflatoxins as shown before!

Fumonisins: Chromatogram

Chromatogram of a fumonisin B1/B2 standard



More Combinations for Mycotoxin Analysis …

MD Scientific

authorized distributor in Denmark
www.md-scientific.dk
Tlf. 70 27 8565

Whenever you need any information regarding this topic, just ask LCTech!

And don‘t forget that LCTech offers wonderful immunoaffinity clean-up columns (IAC) at very affordable prices!

The right email address for your questions:
mycotoxins@Lctech.de