Matrix of the Month

July, 2013:

Aflatoxins in Earth Almond (Tigernut Sedge)

Do you have a special matrix that we should test for mycotoxins? Please let us know and write an e-mail to info@LCTech.de!

Protocol

20 g sample are mixed with 2 g sodium chloride and extracted with 100 mL 80/20 methanol/water and 50 mL n-hexane for 10 minutes.

After filtration the lower phase (n-hexane free) is used. The sample is diluted with PBS (7 + 43).

50 mL are added onto the immunoaffinity column AflaCLEAN.

The column is washed with 10 mL water (deionised) and dried.

The toxin is eluted with 2 x 1 mL methanol and after an incubation of 5 minutes of the first milliliter methanol onto the column (by closing the column outlet).

The eluates are diluted with HPLC water and acetonitrile to conditions of the mobile phase. 100 µL are injected.

HPLC Conditions

HPLC: Dionex Ultimate 3000, isocratic

Column oven: 36 °C

Separation column: Mycotoxin HPLC column with guard

Flow rate: 1.2 mL/min (water/methanol/acetonitrile (60/30/15 (v/v/v))

Fluorescence detection with post column derivatisation (photochemical with UVE)

Excitation wavelength: 365 nm

Emission wavelength: 460 nm

Recovery Rates

Contents of Aflatoxins B1, B2, G1 and G2 in Earth Almond

Aflatoxin	B1	B2	G1	G2
Standard*	100	100	100	100
Recovery rate** Earth almond 10 ppb	104	103	101	93

** Standard is set = 100 % , ** corrected with non-spiked sample*

Chromatograms →

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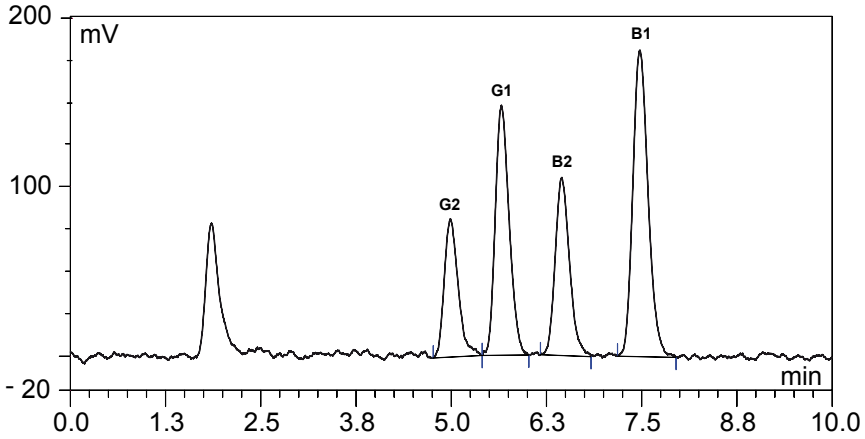
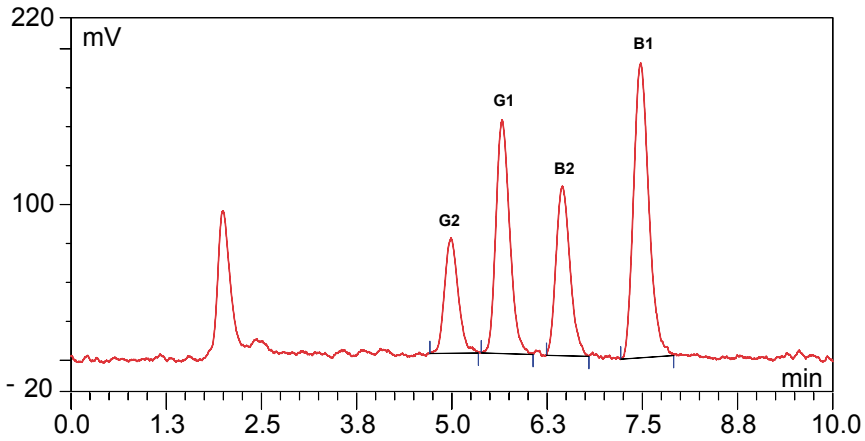
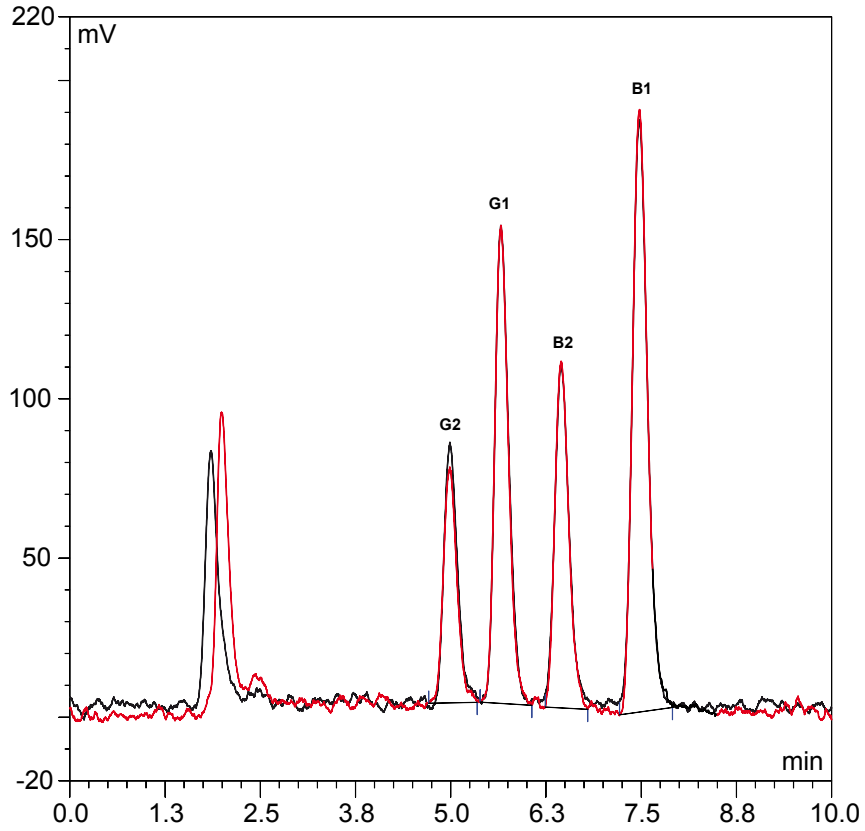
Chromatograms



Standard, representing 100 %



Earth almond, spiked with 10 ppb total toxin



Overlay of both chromatograms

These LCTech products were used:

AflaCLEAN,
Immunoaffinity column
for the Aflatoxins B1, B2, G1, G2
P/N 10514

UVE,
Photochemical reactor
for the analysis of Aflatoxins
P/N 10519

HPLC column,
for the analysis of Aflatoxins
P/N 10522

Do you have further questions?
Please simple write an e-mail to info@LCTech.de!

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