Matrix of the Month

March, 2013:

Aflatoxins
in Dark Chocolate

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

10 g sample are melted with 2 g sodium chloride, 100 ml 80/20 methanol/water and 50 mL n-hexane are added, stir strongly for 10 minutes.

After filtration the lower phase (n-hexane free) is used, 2 mL are mixed with 12 mL PBS/Tween (8 %) and added onto the immunoaffinity column AflaCLEAN.

The column is washed with 10 mL water and dryed. The toxin is eluted with 2 x 1 mL methanol. The first milliliter methanol should incubate on the column bed for 5 minutes.

The eluate is caught, diluted to the conditions of the HPLC mobile phase and analysed via HPLC.

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 Dark Chocolate

Aflatoxin	B1	B2	G1	G2
Standard*	100	100	100	100
Recovery rate** Dark chocolate	90	87	96	97

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

Chromatograms →

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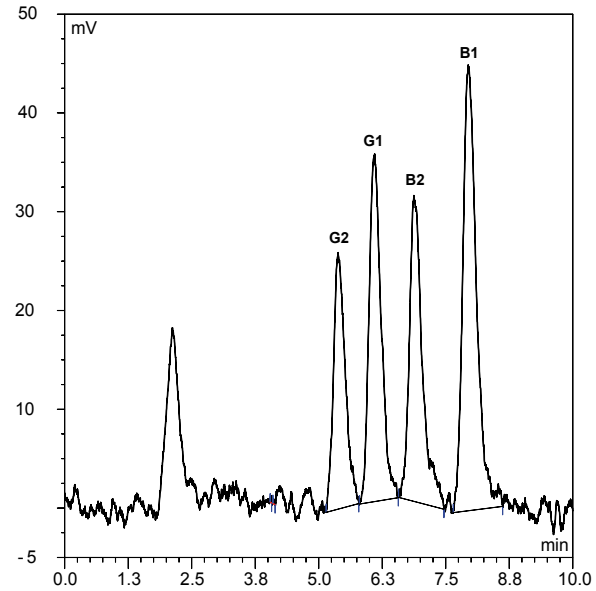
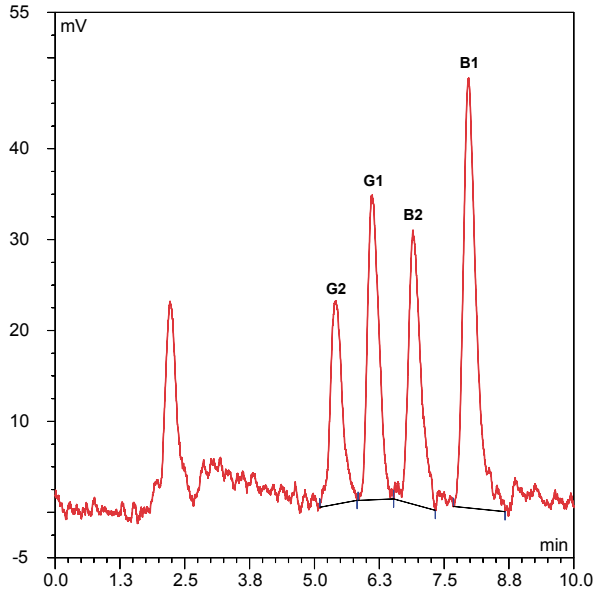
Chromatograms

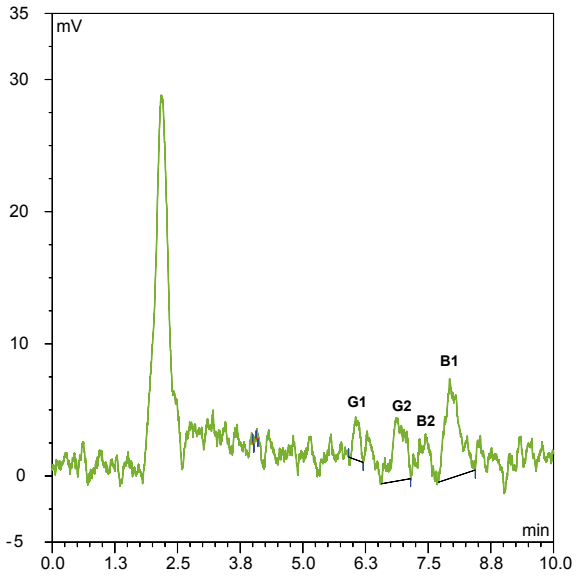
Standard, representing 100 %



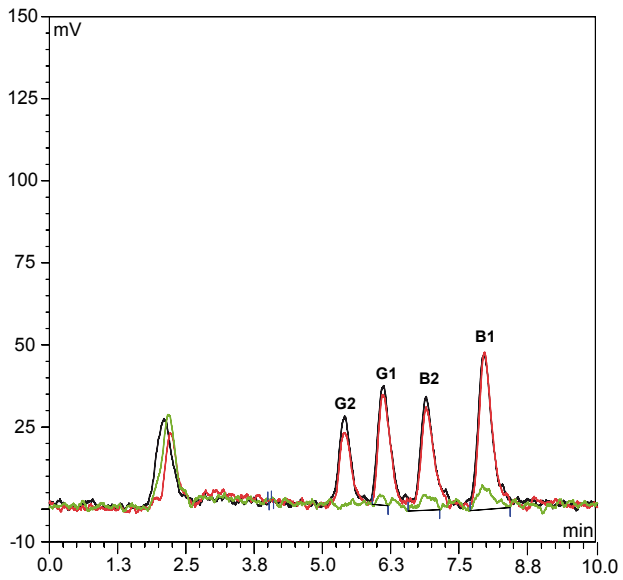
Dark chocolate, spiked with 10 ppb



Dark chocolate, non-spiked



Overlay of the chromatograms



These LCTech products were used:

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

UVE,
Photochemical reactor
for the Aflatoxin analysis
P/N 10519

HPLC column,
for the Aflatoxin analysis
P/N 10522

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

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