

# Matrix of the Month

January, 2013:

**Aflatoxins in herbal tea**  
(rose, lemon grass, ginger)



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](mailto:info@LCTech.de)!

## Protocol

5 g (spiked with 10 ppb) are mixed with 2 g sodium chloride and extracted with 100 mL 80/20 methanol/water for 10 minutes.

The sample is filtrated and then 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 a delay 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

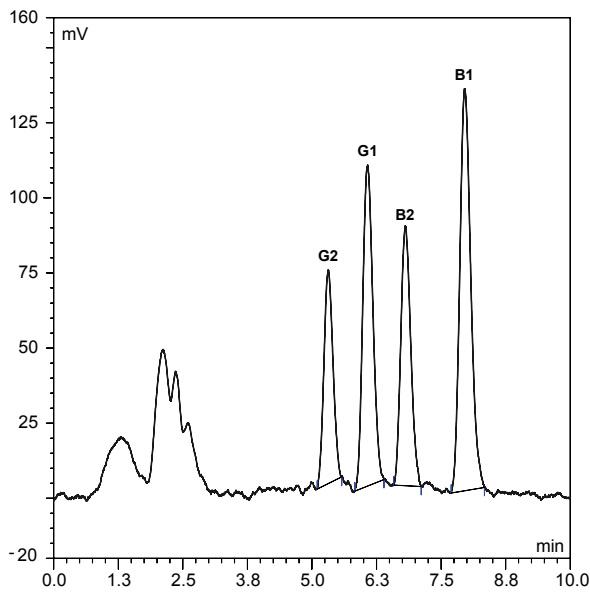
## Recovery Rates

Contents of Aflatoxins B1, B2, G1 and G2 in herbal tea				
Aflatoxin	B1	B2	G1	G2
Standard*	100	100	100	100
Recovery rate** Herbal tea (rose, lemon grass, ginger)	102	100	94	84

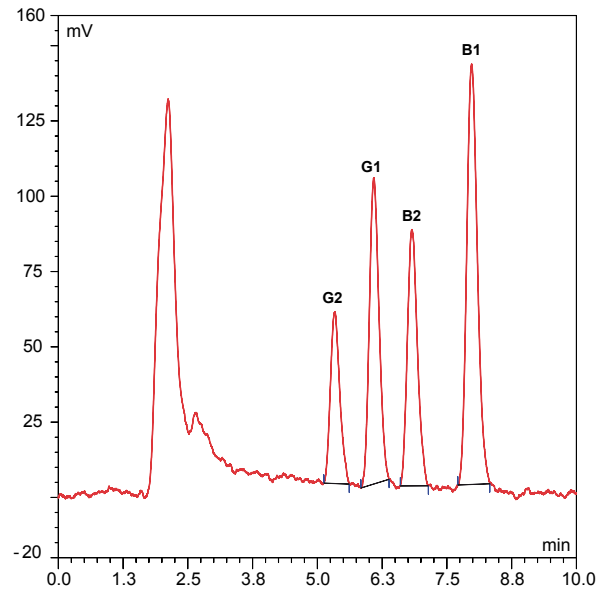
\* Standard is set = 100%, \*\* corrected with non-spiked sample

Chromatograms

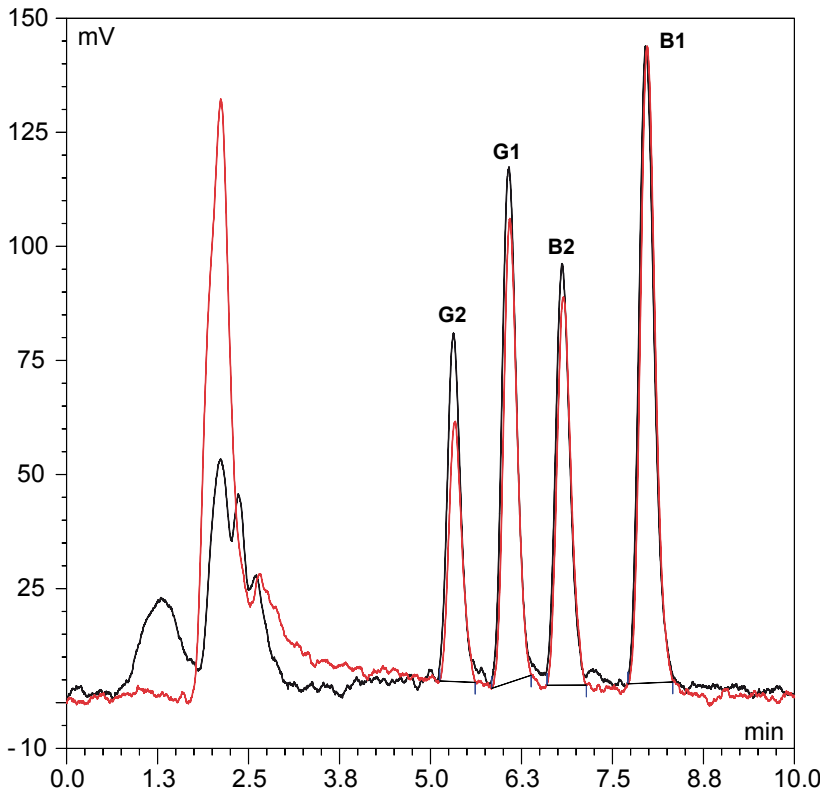
Standard, representing 100 %



Herbal tea, spiked with 10 ppb total toxin



Overlay of both chromatograms



Standard, representing 100 %

Herbal tea,  
spiked with 10 ppb total toxin

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 simply write an e-mail to [info@LCTech.de](mailto:info@LCTech.de)