

# Matrix of the Month

April, 2013:  
**Aflatoxins in Olive Oil**



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

10 g sample are mixed with 2 g sodium chloride.  
 100 mL 80/20 methanol/water and 50 mL n-hexane are added, stir for 30 minutes.  
 The sample is freezeed to -20°C, fat and n-hexane are completely removed,  
 the sample is once more centrifugated at 1500 for 10 minutes.  
 The lower phase is used (2 mL + 12 mL PBS/Tween (8 %)). 14 mL are added  
 onto the immunoaffinity column AflaCLEAN and then the sample flask  
 and the column are washed with 10 mL deionised water.  
 The column is dried and eluated with 2 x 1 mL methanol.  
 The first milliliter methanol should incubate to the column bed for 5 minutes.  
 The eluate is diluted to the conditons of the HPLC mobile phase and a maximum  
 of 100 mL 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

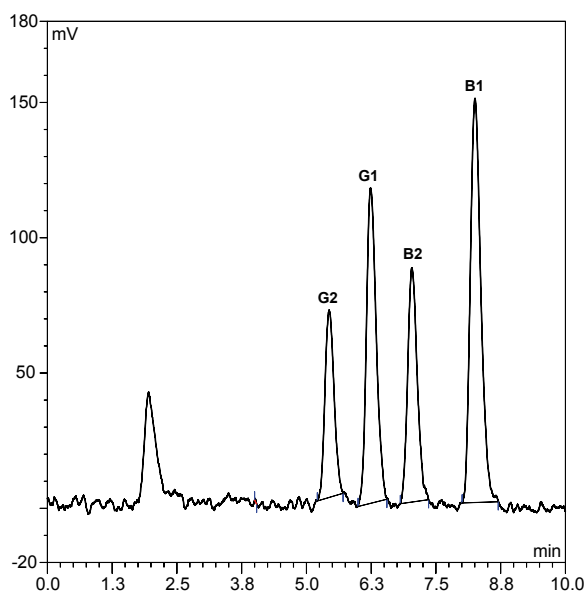
## Recovery Rates

Contents of Aflatoxins B1, B2, G1 and G2 in Olive Oil				
Aflatoxin	B1	B2	G1	G2
Standard*	100	100	100	100
Recovery rate** Olive oil 10 ppb	104	107	90	68

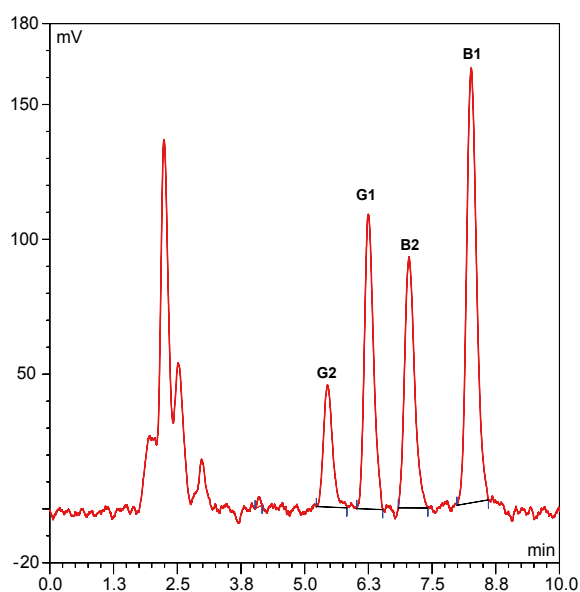
\* Standard is set = 100 % , \*\* corrected with non-spiked sample

Chromatograms

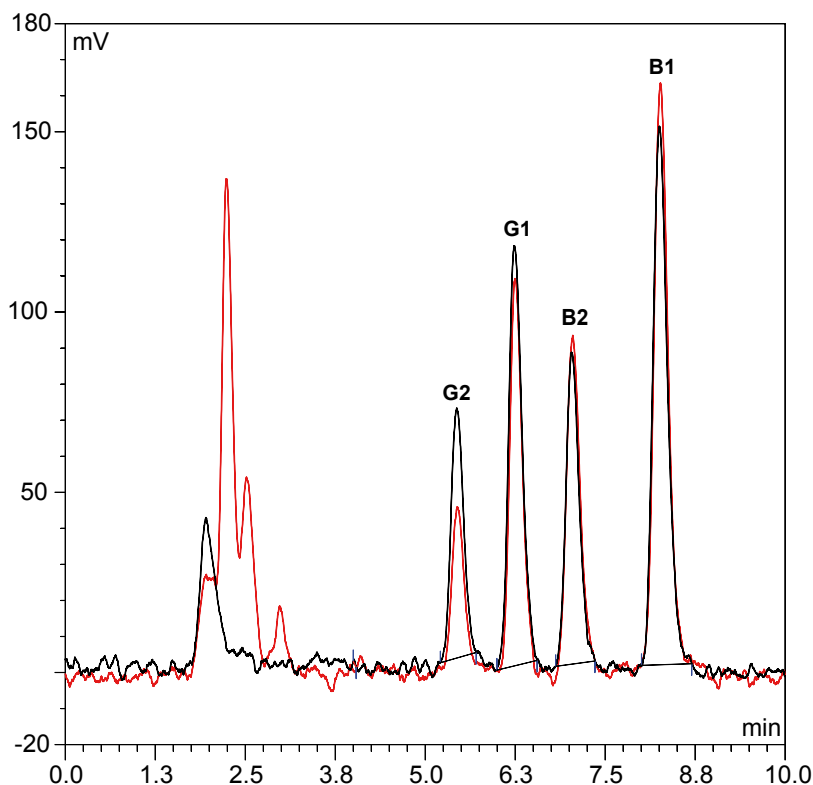
Standard, representing 100 %



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