

# Matrix of the Month

August 2014:

## Aflatoxins in Pistachios

processed with  
**FREESTYLE ThermELUTE™**



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

Spike 20 g homogenized pistachios with 2 g sodium chloride and extract them with 100 mL methanol/water (80/20 (v/v)). Add 50 mL n-hexane for defatting during the extraction process. Filtrate the extract and dilute 7 mL of the filtrate with 43 mL PBS buffer (pH 7.2). In case of turbidities filtrate the diluted extract once again.

Apply 2.5 mL to the AflaCLEAN SMART column for handling the sample with the robotic system FREESTYLE ThermELUTE™. The flow rate of 3 mL/min is kept during the complete loading and washing process. The column is washed with 2 mL de-ionised water.

Next is a thermal elution of the column using the ThermELUTE™ technology and the direct injection of the eluate online into the HPLC.

### HPLC Conditions

#### Aflatoxin B, G

HPLC: Isocratic

Column oven: 36 °C

Separation column: RP C18 (e.g. P/N 10522)

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

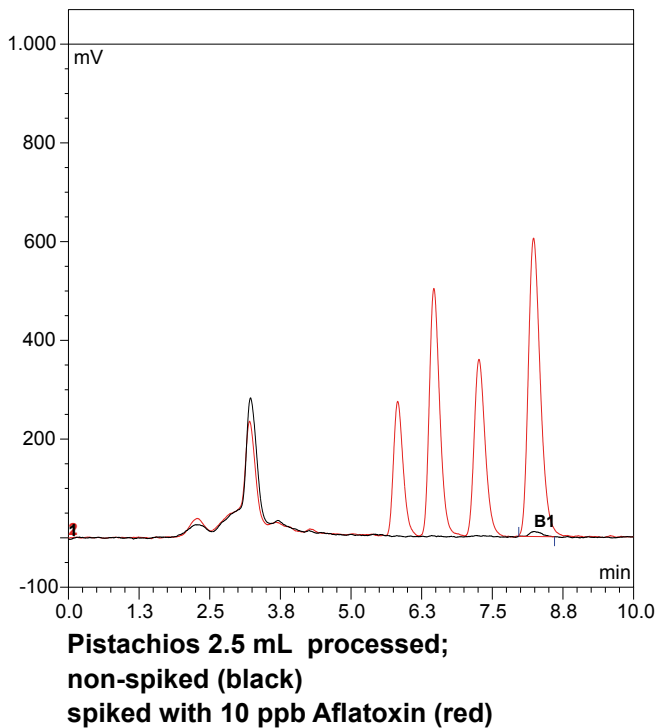
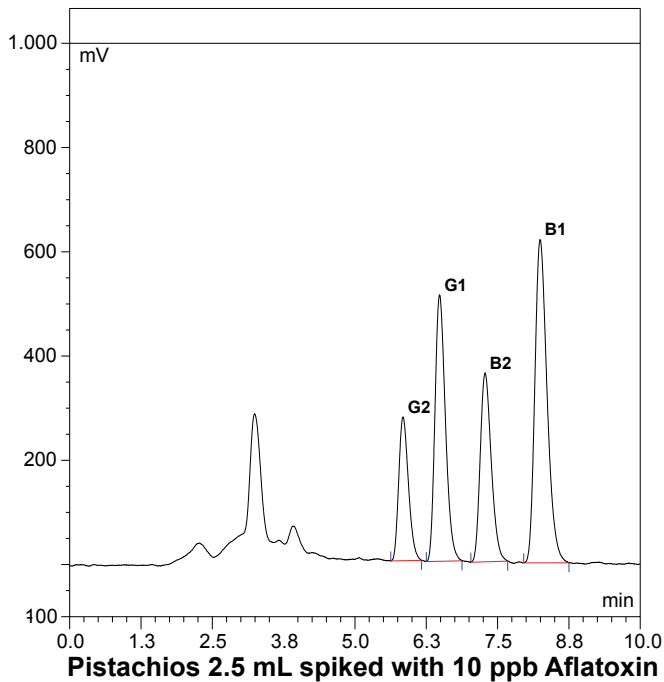
Emission wavelength: 460 nm

### Recovery Rates

Content of Aflatoxins B1, B2, G1 and G2 in Pistachios				
Aflatoxin	B1	B2	G1	G2
Standard*	100	100	100	100
Recovery rate** Pistachios 10 ppb	98	94	95	93

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

Chromatograms



**FREESTYLE ThermELUTE™** injects the eluate from SMART column directly into the HPLC



**FREESTYLE ThermELUTE™** module

These LCTech products were used:

AflaCLEAN SMART, Immunoaffinity column for Aflatoxin B1, B2, G1, G2

P/N 12862 / 12863

UVE, Photochemical reactor for the analysis of mycotoxins

P/N 10519

HPLC column, for mycotoxin analysis

P/N 10522

FREESTYLE ThermELUTE™, Robotic system for sample preparation and analysis

P/N 12663, 12668, 13691

Do you have further questions?  
Please just write an e-mail to [info@LCTech.de](mailto:info@LCTech.de)