

Matrix of the Month

September 2014:

Aflatoxin B/G
in Raisins

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!

Protocol

Spike 20 g homogenized raisins 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 up to 10 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: 360 nm

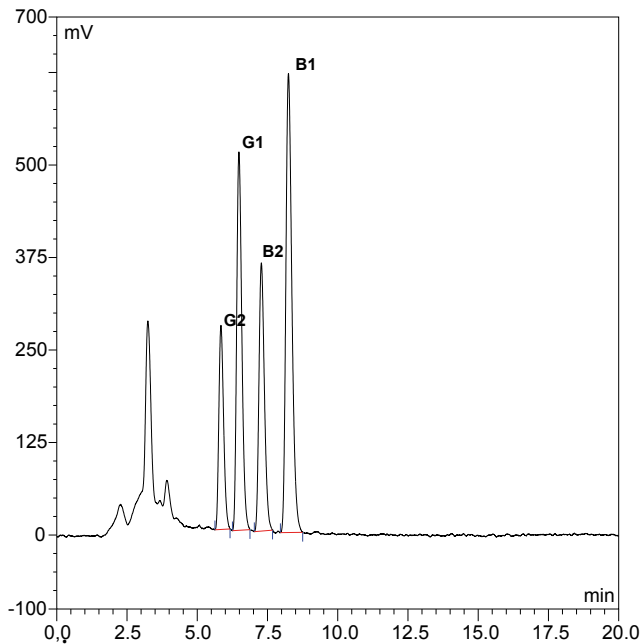
Emission wavelength: 465 nm

Recovery Rates

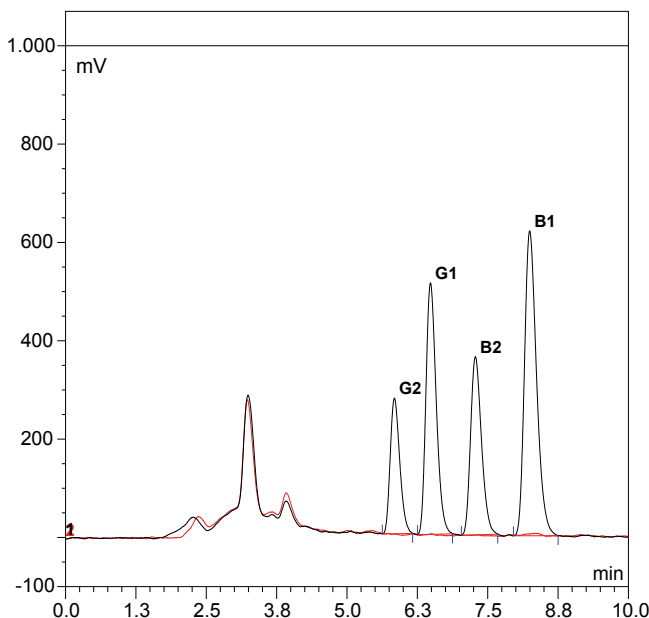
Content of Aflatoxins B1, B2, G1 and G2 in Raisins				
Aflatoxin	B1	B2	G1	G2
Standard*	100	100	100	100
Recovery rate** Raisins 10 ppb (10 ppb = 10µg/kg)	94	96	94	91

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

Chromatograms



Raisins 2.5 mL spiked with 10 ppb Aflatoxin



Raisins 2.5 mL processed;
non-spiked (red)
spiked with 10 ppb Aflatoxin (black)



SMART column



FREESTYLE ThermELUTE™ grips
adapter for SMART column

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

P/N 12663, 12668, 13691

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