

Matrix of the Month

January 2015:

Aflatoxin B/G

in Baby Food (Wheat Porridge)

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

20 g matrix are mixed with 2 g sodium chloride and are extracted with 100 mL methanol/water (80/20 (v/v)) and 50 mL n-hexane for defatting by stirring it for 10 minutes. The extract is filtrated and centrifuged for 5 minutes at 2000 xg to support phase separation of n-hexane and methanol extract. Filtrate the extract and dilute 7 mL of the clarified (n-hexane-free) extract with 43 mL PBS buffer. In case of precipitation filtrate the diluted extract once again using glass fiber filters.

10 mL of the sample are applied on to the AflaCLEAN SMART column by the robotic system FREESTYLE ThermELUTE™ and washed with 2 mL de-ionised water.

The column is eluted via ThermELUTE™ technology and directly injected into the HPLC by the FREESTYLE System. The toxins could be analysed by Fluorescence or MS.

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)

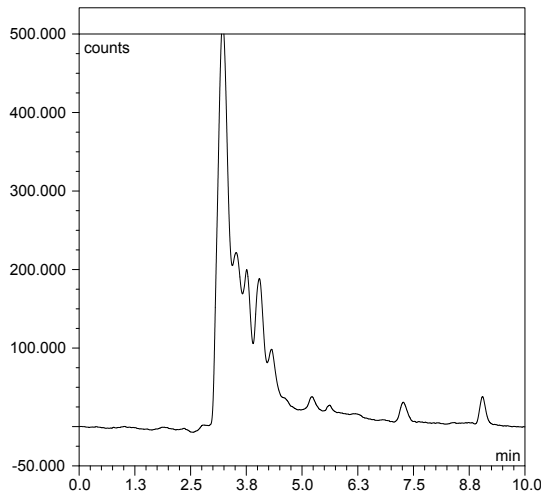
Excitation wavelength: 365 nm

Emission wavelength: 460 nm

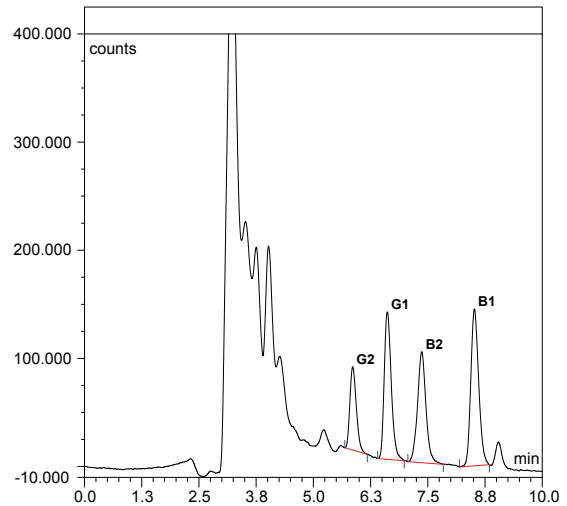
Recovery Rates

Content of Aflatoxins B1, B2, G1 and G2 in Baby Food (Wheat Porridge)				
Aflatoxin	B1	B2	G1	G2
Standard*	100	100	100	100
Recovery rate** wheat porridge 0.25 ppb (total toxin)	99	100	98	99

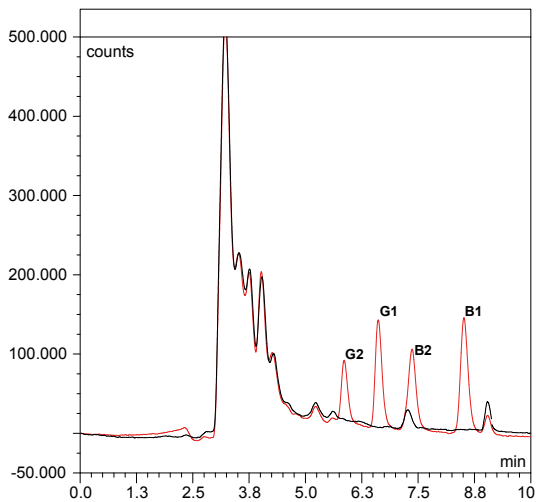
* Standard is set = 100 % , ** corrected with non-spiked sample



Wheat Porridge not spiked (blind sample)



Wheat Porridge spiked with 0.25 ppb total aflatoxin (equale to 0.1 ppb aflatoxin B1)



Overlay of both cromatograms not spiked (black), spiked with 0.25 ppb total aflatoxin (red)



AflaCLEAN SMART columns with needle

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



FREESTYLE ThermELUTE™

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