

Matrix of the Month

July 2015:

Ochratoxin A in Dry Parsley

manual or automated 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!

Fully Automated Sample Preparation and Analysis

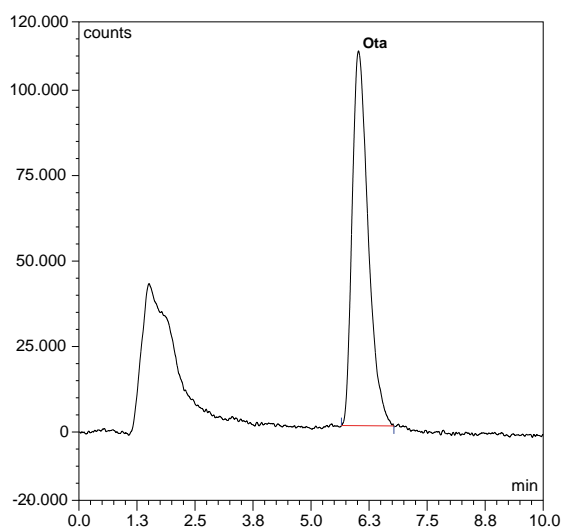
The robotic system FREESTYLE ThermELUTE™ in combination with any HPLC with FLD enables the fully automated mycotoxin analysis of ochratoxin A as well as of the aflatoxins B1, B2, G1 G2 and M1. Using the SMART format of the immunoaffinity columns the system needs less solvent and less sample but reaches extreme low detection limits within the lower ppt-range due to the unique technology of the ThermELUTE™ module.

Cross-contamination is reliably avoided.

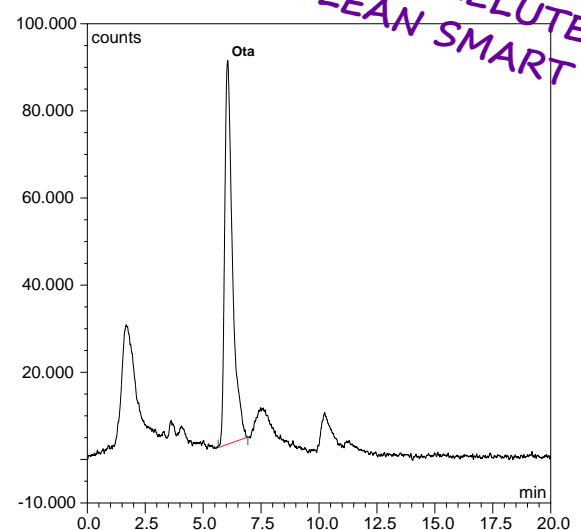
Automated Processing with FREESTYLE ThermELUTE™

Extract, filtrate and dilute the parsley according to the description of the manual processing. Put your samples into the FREESTYLE ThermELUTE™, equip the system with OtaCLEAN SMART columns, choose the method from the software and press the start button. It's as easy as that!

*Fully automated with
FREESTYLE ThermELUTE™
and OtaCLEAN SMART*



**Ota standard, 0,4 ng / column
(represents 10 ppb)**



**Parsley, spiked with 0,4 ng / column
(represents 10 ppb)**

Protocol of Manual Processing

Extract 10 g of parsley and 2 g NaCl with 100 mL of the extraction solution (methanol/water, 80/20, v/v) and 50 mL n-hexane for at least 10 minutes. Filtrate the raw extract. Dilute 4 mL of the filtrate with 24 mL PBS containing 8 % Tween 20. In case of precipitation or turbidity you can remove them by filtration.

Apply 14 mL of the sample (represents 0.2 g matrix) to the OtaCLEAN immunoaffinity column with a maximum flow rate of 2 mL/min. Rinse afterwards the sample reservoir with 10 mL deionised water. Apply this washing solution onto the IAC column, too.

Dry the column with a gently air-flow and elute it afterwards with 2 mL methanol. Take care, that the methanol incubates within the column bed for 5 minutes.

Collect the eluate and dilute it to HPLC conditions of the subsequent analysis.

HPLC Conditions

Ochratoxin A

HPLC:	Isocratic
Column oven:	40 °C
Separation column:	RP EC 125/3 nucleosil 120-3 C18
Flow rate:	0.6 mL/min
Eluent:	HPLC-water/methanol/acetonitrile (40/55/5 (v/v/v))
Fluorescence detection:	without derivatisation
Excitation wavelength:	335 nm
Emission wavelength:	465 nm

Recovery Rates

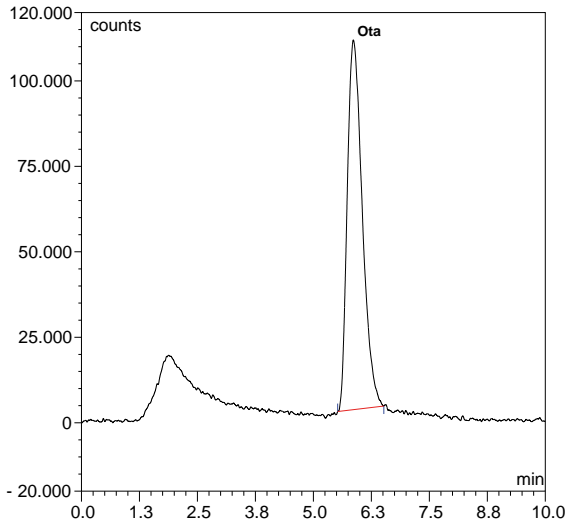
Content of Ochratoxin A in Dry Parsley	
Standard*	100
Recovery rate** Dry parsley, 10 ppb	89

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

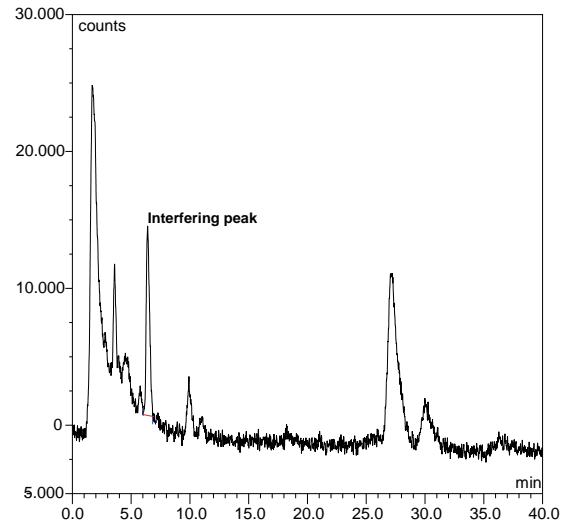


OtaCLEAN columns,
different formats

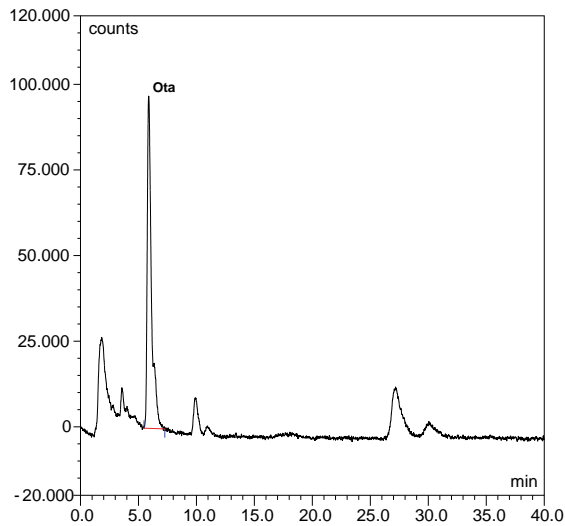
Chromatograms →



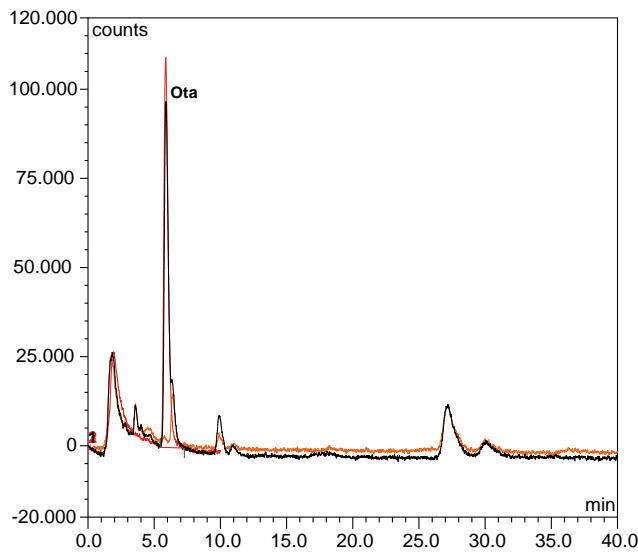
Ota standard, 2 ng/2 mL (represents 10 ppb)



Parsley, not spiked, blind sample



Parsley, spiked with 10 ppb ($\mu\text{g}/\text{kg}$)



Overlay of chromatograms:
 standard 2 ng/2 mL, represents 10 ppb (red)
 Parsley, not spiked (orange)
 Parsley, spiked with 10 ppb ($\mu\text{g}/\text{kg}$) (black)

These LCTech products were used:

OtaCLEAN
 immunoaffinity column
 for Ochratoxin A
 P/N 10515 / 11535

OtaCLEAN SMART
 immunoaffinity column
 for Ochratoxin A
 P/N 13346 / 13351

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