



August 2016

On the Occasion of the Day of Beer

Ochratoxin A in Beer

Do you have a special matrix that we should test for mycotoxins? Please let us know and write an e-mail to: mycotoxins@LCTech.de

Sample Preparation - Manual and Automated

MYCOTOXINS

The International Beer Day

The international beer day is a celebration on the first Friday of every August, this year it's the 5th of August. On this occasion our laboratory has tested beer as matrix of the month for you. We are happy to provide you below chromatograms, recovery rates and a protocol for the manual processing.

The challenge many laboratories have to face nowadays is to be able to process many samples as quickly as possible. To facilitate this task, LCTech has developed the OtaCLEAN SMART immunoaffinity column for the analysis of ochratoxin A in food. Ochratoxin A is a naturally occurring mycotoxin which is produced by various *Aspergillus* and *Penicillium* species as primary contaminant in various food and feed stuffs.

The Robotic System FREESTYLE ThermELUTE™

Fully Automated Mycotoxin Analysis - Twenty-four-seven

Using OtaCLEAN SMART your automated processing is especially effective. The best of all: Your sample throughput rises up to 500 samples per week and your solvent consumption is clearly reduced. The robotic system FREESTYLE ThermELUTE™ takes over your time consuming work and processes the SMART columns fully automatically: from raw extract to chromatogram.

Extract, filtrate and dilute your samples in accordance with the processing protocol, put them into the FREESTYLE ThermELUTE™, equip the racks with the SMART columns, configure your method in the software and start the FREESTYLE ThermELUTE™. From now on the robotic system does the work for you.



*FREESTYLE ThermELUTE™
for fully automated
sample preparation*

Protocol of Manual Processing

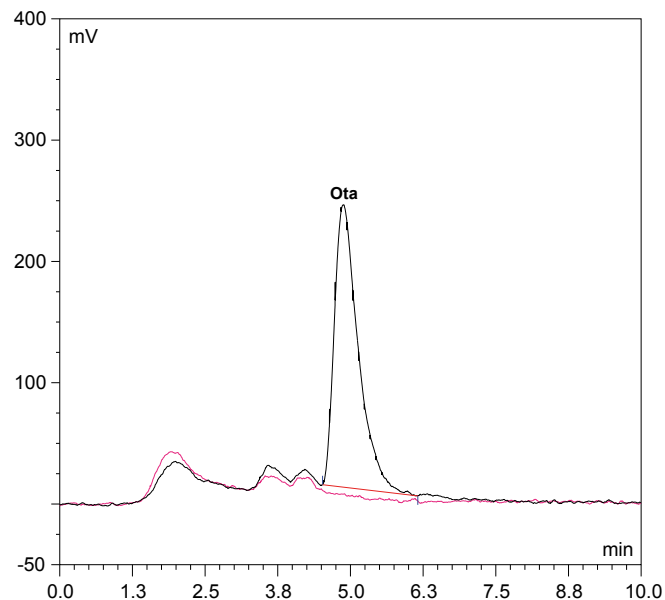
Degas 20 mL of beer by treatment with ultrasound. Add 8 mL of (3%) NaHCO₃-solution and mix the sample material. In order to remove precipitations, filtrate the sample with a glass filter. Afterwards add 12 mL PBS to 3 mL of the material and mix the sample.

Load 10 mL of the filtrated sample onto the immunoaffinity column OtaCLEAN SMART and rinse the sample reservoir then with 2 mL of water. Load the rinsing solution onto the column, too. If there is foam at the surface of the column, wash it again with 2 mL of water. Dry the column by flushing air through it subsequently.

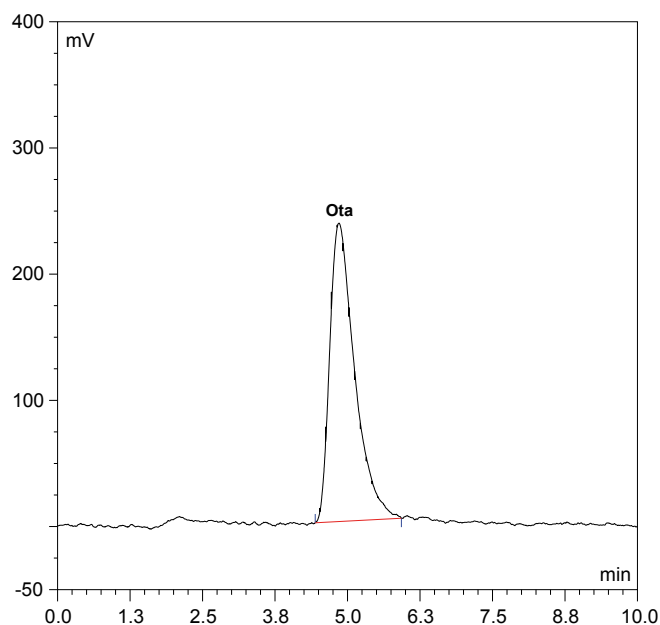
Eluate the toxin through 400 µL methanol. Take care, that the methanol incubates 5 minutes into the column bed, to ensure a full denaturation of the antibodies.

Adjust the eluent afterwards to fluidic conditions of the HPLC or inject the sample directly into the HPLC.

Chromatograms



Black: Beer spiked (3 ppb)
Red: Beer not spiked



OTA-Standard (represents 3 ppb (4.28 ng / 400 µL))

HPLC-Conditions (Ochratoxin A)

HPLC:	isocratic
Column Oven:	40 °C
HPLC-Column:	RP EC 125/3 nucleosil 120-3 C18
Flow Rate:	0,6 mL/min
Eluent:	HPLC-water/ methanol/acetonitrile + 1% acetic acid (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 Beer

Mycotoxin	Ochratoxin A
Standard*	100
Recovery Rates** Beer, 3 ppb	90

*Standard is set = 100 %, **Corrected with non-spiked sample/ The results correspond to the performance specifications of EC 401/2006 (Section. 4.3.1.1)

These LCTech products were used:

OtaCLEAN SMART,
Immunoaffinity Columns for Ochratoxin A
P/N 13346 / 13351

FREESTYLE ThermELUTE™, Robotic System
for Fully Automated Sample Preparation
P/N 12663 / 12668 / 13691