Ochratoxin A in figs

Cleaned-up with *OtaCLEAN*

Contamination of dried figs

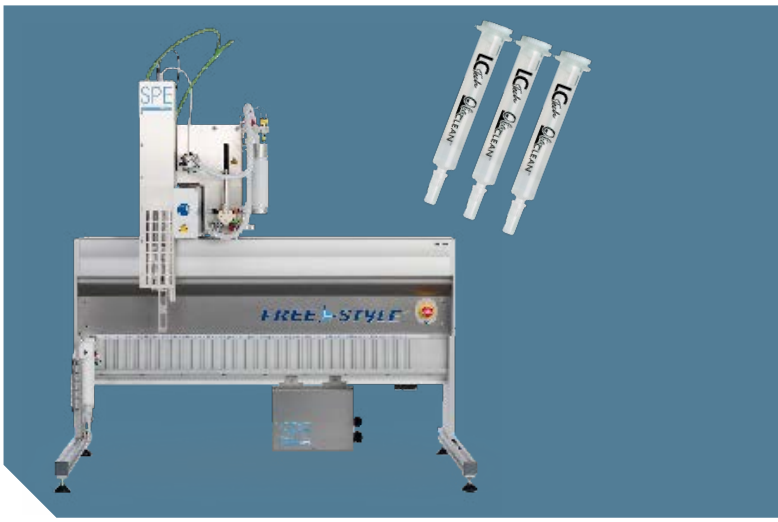
Even figs are getting dried for preservation purposes, figs are a potential source for mould growth and thus for the presence of toxic mycotoxins as long as there is remaining humidity in. In 2021, 65 complaints of dried figs to be traded in Europe were found with excessive mycotoxin concentrations.

In 2022, 20 mycotoxin findings have already been detected in dried figs to be imported into the EU. The toxins aflatoxin and ochratoxin A were detected here. Today we show the analysis of Ochratoxins in it, which even with this high content of sugar is ideally performed with LCTech columns.

OtaCLEAN - IAC clean-up column

Despite their small size, the immunoaffinity columns of only 3 cm convince with a high loading capacity, high matrix compatibility, lower price, reduced solvent consumption and shorter processing times.

In the following use case, only 7 minutes are required for sample processing. Less than 2 minutes for column loading and washing + 5 minutes for the elution process.



FREESTYLE SPE with immunoaffinity columns OtaCLEAN

Processing protocol

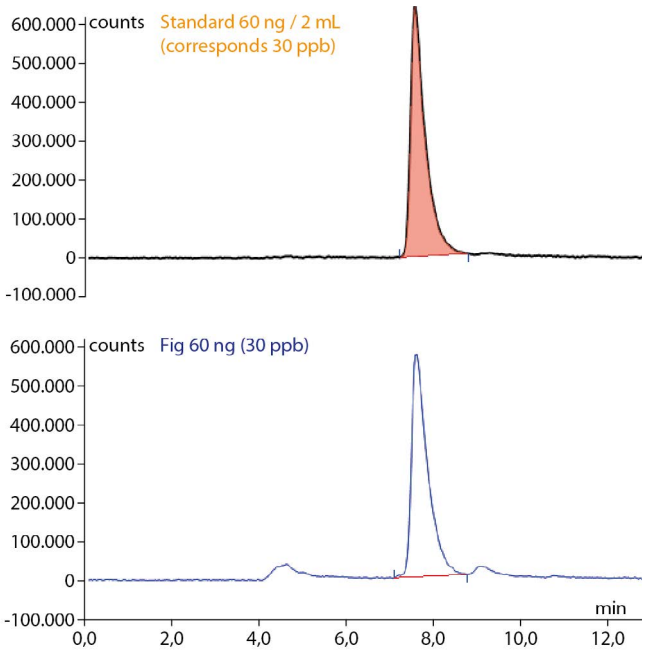
Mix 20 g homogenized sample material with 2 g sodium chloride. For extraction use 100 mL methanol/water (80/20 (v/v)). During the extraction process, add 50 mL of n-hexane to efficiently remove fats and oils. An extraction of at least 10 minutes is recommended.

Filter the crude extract and then centrifuge at 3000 xg for 5 min to achieve optimal separation of the methanolic lower phase from the n-hexane phase. Mix 2 mL of the lower methanolic phase with 12 mL of PBS buffer containing 8 % Tween20. Load 2.8 mL onto the AflaCLEAN SMART immunoaffinity column at a flow rate of 3 mL/min. Rinse the sample reservoir with 2 mL of deionised water and load the wash solution onto the IAC column at the same flow rate.

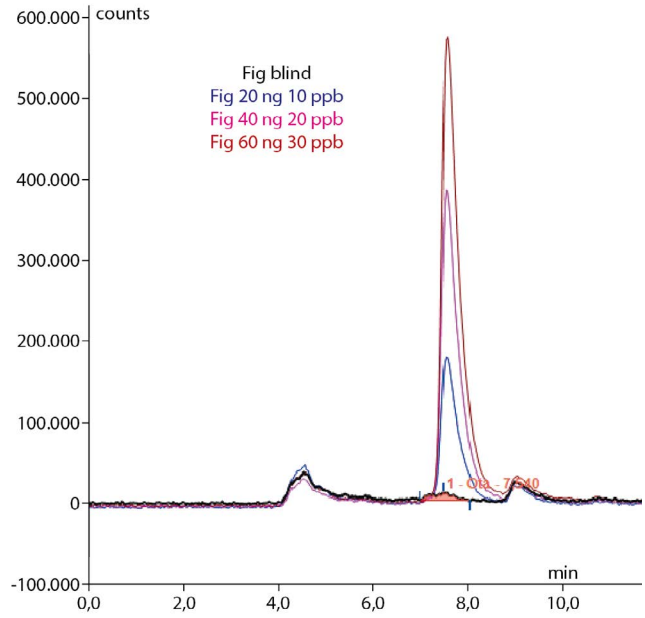
After washing the column bed, dry the column with an air stream. Add 0.4 mL of methanol onto the column and let it incubate. Ensure that it is allowed to soak in the column bed for at least 5 min to ensure complete denaturation and thus elution of the toxin. Samples can be analysed when diluted to the HPLC solvent conditions.

LCTech

Chromatograms



Comparison of the chromatography of the 30 ppb standard (60 ng / 2 mL) with the fig sample (30 ppb) cleaned-up using OtaCLEAN.



Overlay of the ochratoxin chromatograms. Fig samples (black), 10 ppb (blue), 20 ppb (pink), 30 ppb (red).

Recovery rates**	
Analyt	Ochratoxin A
Standard *	100
10 ppb	85
20 ppb	92
30 ppb	92

* Standard was set 100%
** Corrected with non-spiked sample / The results are in accordance with the performance specifications of EC 401 / 2006 (section 4.3.1).

Conditions	
HPLC	Isocratic
Column oven	40 °C
Separation column	RP EC 125/3 nucleosil 120-3 C18
Flow rate, Running medium	0.6 mL/min; HPLC-water/methanol/acetonitrile (40/55/5 (v/v/v) +1% acetic acid)
Fluorescencedetection	Without derivatisation
Excitation wavelength	335 nm
Emission wavelength	465 nm

Conclusion

The OtaCLEAN immunoaffinity column offers a very good usage in the whole range of food and feed analysis with best clean-up and good recovery rates. The matrix tolerance is high, a loading with up to 2 g enables the highest measuring sensitivity even for baby food. Due to the selective binding of the toxin, excellent chro-matographicperformance is given, which significantly reduces chromatography times.

These LCTech products were used:

10515 OtaCLEAN (25 pcs/box)

FREESTYLE SPE in mycotoxin configuration

please aks for details

Do you have a special request as to which matrix we should test for you?
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