The Mycotoxin Zearalenone
Zearalenone (ZEA) is a mycotoxin produced by various fusarium species. In feed, it is adjacent to the toxin deoxynivalenol the most commonly found toxin. Zearalenone itself is toxic, but in the organism it can be converted into even more toxic compound (alpha- or beta-zearalenone).

The New Affinity Columns ZeaCLEAN SMART

These interesting ZeaCLEAN SMART columns convince not only by their small size and low price, but also through reduced solvent usage, shorter processing time and very good recovery rates. The columns are suitable for all cereal matrices like flour, corn, bread, pastries, noodles, millet, soy beans, animal feed and even oils. The minimum shelf life of the columns is 12 months from the date of manufacture at a storage temperature between 8 - 30 °C.
The working mode is based on the principles of affinity chromatography. The low sample volume and the concentration on the column allows the verification of zearalenon even in the application field of baby food without significant efforts. Clean-up with ZeaCLEAN SMART can be done either manually or automatically with the robotic system FREESTYLE ThermELUTE™.

**The Next Generation Automated Sample Preparation**

Fully automated mycotoxin analysis from raw extract to chromatogram - quite simple with the robotic system FREESTYLE ThermELUTE™: day and night and even at weekends.

Thermal denaturation breaks the toxin-bond on the bed material. The large-volume and aqueous elution with quantitative transfer is made directly into the HPLC sample loop. The HPLC analyses the sample afterwards. Losses caused by evaporation or adsorption are excluded, sensitivity is increased enormously. Per toxin, there is only one method for all regulated matrices. Mycotoxin analysis has never been easier!

**Protocol of Manual Processing**

Extract 2 g of corn oil with 2 mL n-hexan and 20 mL methanol / 1 % ammonium carbonate (pH 9.0) (90/10 (v/v)) for 30 minutes by vigorous shaking or stirring. Centrifuge the raw extract for 20 minutes by 3000 x g. Continue to use the methanol phase and mix 2.5 mL with 20 mL PBS (represents 0.25 g).

Load the sample onto the ZeaCLEAN SMART column with a flow rate of 1.5 mL/min. Wash the column with 4 mL (20 %) Acetonitrile in HPLC-water. Dry the column by flushing air through it. Eluate by adding 400 µL of Acetonitrile. Keep in mind that the column bed is incubated with methanol for at least 5 minutes before the eluate will be collected.

In order to remove precipitations, filtrate the eluate through a PTFE filter after dilution with HPLC-water.

Inject the sample into the HPLC.

Find more Details, Recovery Rates, HPLC-Conditions and Chromatograms here.

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Details for direct download

Zearalenone in Corn Oil (pdf | 563.1 KB)