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Application Note

Aflatoxins in Peanuts

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This is an Application Brief and does not contain a detailed Experimental section.

Abstract

This application brief describes the analysis of alfatoxins in peanuts.

Introduction

This application brief describes the analysis of alfatoxins in peanuts.

Experimental

Pretreatment

1. Add 5 g of sodium hydroxide to 20 g of homogenized sample, followed by 30 mL of n-hexane.

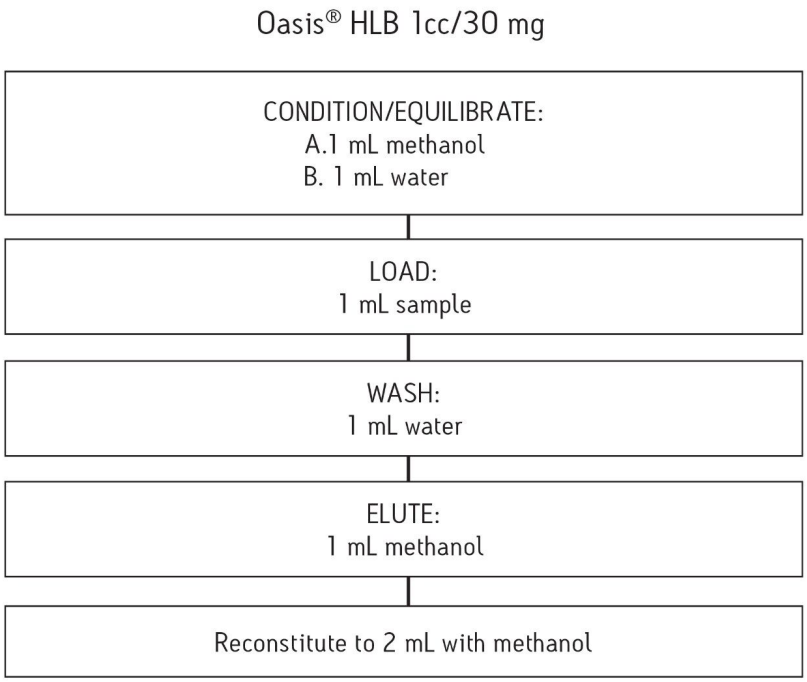
2. Add 100 mL 60% aqueous methanol and homogenize.

3. Ultrasonicate for 30 minutes.

4. Filter sample through 15 cm filter paper.

5. Take 1 mL aliquot from 60% methanol layer for SPE cleanup.

SPE Procedure

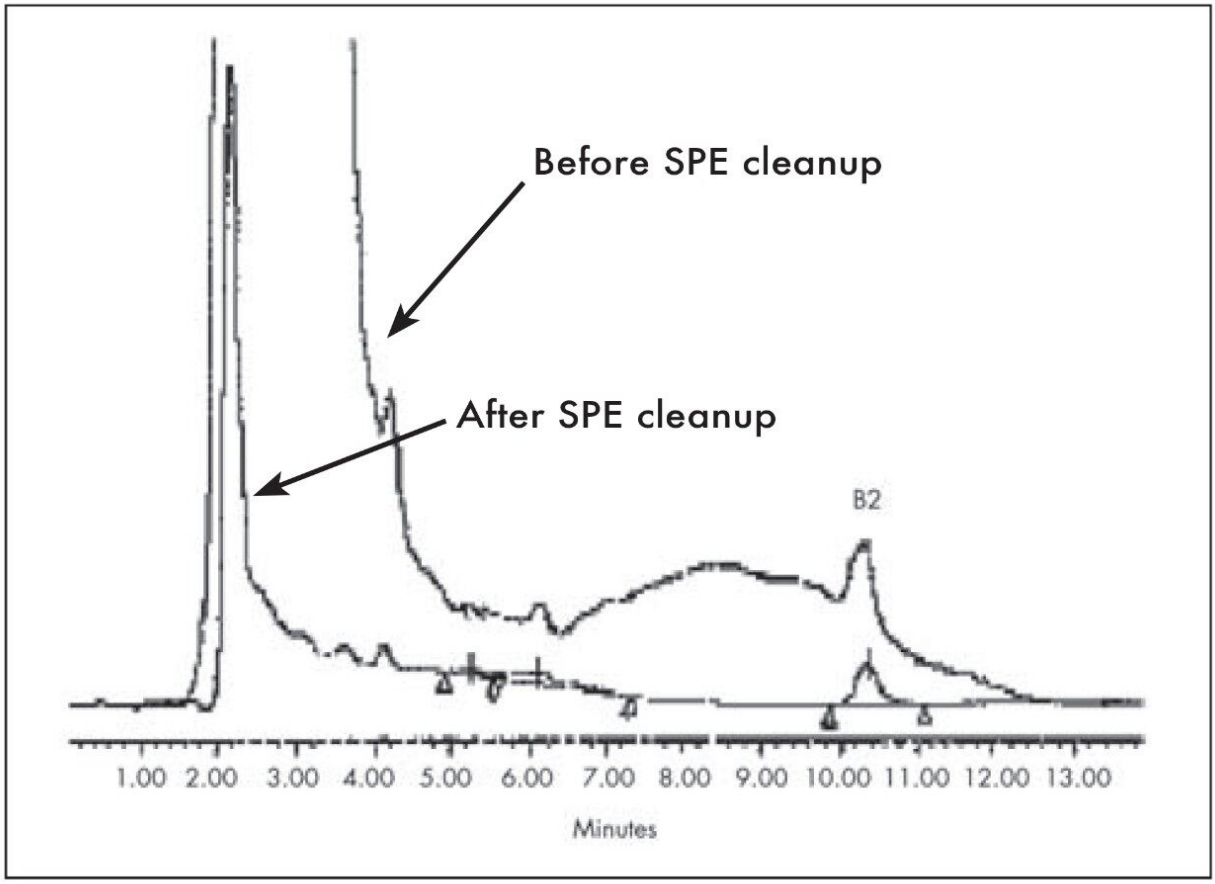


LC Conditions

Instrument:	Alliance HPLC 2695 System
Column:	Symmetry Shield RP18, 4.6 x 150 mm, 5 µm
Flow rate of iodine:	0.2 mL
Flow rate:	1 mL/min
Mobile phase:	A. methanol B. water
Isocratic gradient:	35% A: 65% B, for 20 minutes
Column temperature:	30 °C
Derivatization temp.:	80 °C

Excitation wavelength:	365 nm
Emission wavelength:	455 nm
Post-column derivatizaton reagent:	Dissolve 200 mg iodine in 10 mL methanol, top up 1000 mL with water
Detector:	2475 Multi Wavelength Fluorescence

Results and Discussion



Matrix interference is greatly reduced when sample is cleaned up by using Oasis HLB SPE cartridge.

Analyte	Recovery %	Detection (p/µg kg)
Aflatoxin G2	101± 7.18	0.11
Aflatoxin G1	72.8±3.63	0.20
Aflatoxin B2	97.5±5.48	0.12
Aflatoxin B1	68.8±5.48	0.24

Results of B1, B2, G1, G2 in peanuts (n=5)

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