

November 6, 2013 (18:30-19:30)



VENDOR SEMINAR:

AUTOMATION OF MYCOTOXIN ANALYSIS - AN AUTOMATED SYSTEM FOR MYCOTOXINS USING ON LINE IMMUNOAFFINITY CARTRIDGES IN CONJUNCTION WITH HPLC

Automation of mycotoxin analysis - An automated system for mycotoxins using On Line Immunoaffinity Cartridges in conjunction with HPLC

Ria Rhemrev, Elizabeth Manning, Tilmann Bur

R-Biopharm AG, An der neuen Bergstrasse 17, 64297 Darmstadt, Germany

Automation and increasing efficiency play an important role in routine testing laboratories. R-Biopharm Rhone NL and R-Biopharm Rhone Ltd, have developed a patented, ON-LINE affinity cartridge for aflatoxins in collaboration with Spark Holland and Eurofins, Hamburg, which can be used prior to HPLC or LC-MS/MS. The cartridges are used together with the Symbiosis™ handling system from Spark, Holland and combine automated on line sample application with quantitative analysis of aflatoxins B₁, B₂, G₁ and G₂. The affinity cartridge contains a monoclonal antibody that is specific for aflatoxins B₁, B₂, G₁ and G₂, coupled to a hydrophilic polymer that can withstand high pressure. The technology is highly innovative and enables the cartridge to be incorporated directly on-line with an LC system. The affinity cartridge offers highly specific, sensitive, rapid and automated analysis for aflatoxins in a wide range of food matrices. Using the aflatoxin affinity cartridge, the sample application, washing and elution is performed on line for up to a maximum of 12 samples before the cartridge is automatically removed and replaced with a new cartridge. This level of reuse has been found to offer optimum cartridge performance and reduce the chance of interference or carryover.

The method has been validated with various products like cereal, peanut and dried fruit samples.

A key advantage of this process is that during the LC run of one sample, the next sample is simultaneously passed through the affinity cartridge, reducing the time taken for subsequent sample clean up to almost zero. The use of an on line affinity cartridge reduces labour, consumables and solvents, whilst improving traceability, accuracy and reducing human error.