



NEWS RELEASE

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Researchers Develop GPC-LC-MS/MS Method to Screen for 31 Mycotoxins in Edible Oil

Comprehensive mycotoxin screen enables compliance with new regulations at lower cost

MOUNTAIN VIEW, Calif.—February 25, 2009 --Pickering Laboratories today announced that researchers at the Munich Technical University and Bavarian Health and Food Safety Authority have developed an innovative, comprehensive mycotoxin screening method based on the use of LCTech's GPC ULTRA gel permeation chromatography instrument. Distributed by Pickering Laboratories in North America for sample cleanup prior to separation and detection, the new GPC instrument separates low weight mycotoxins from high molecular weight food constituents prior to high performance liquid chromatography (HPLC) separation and mass spectroscopy (MS) detection. The new method substantially lowers the cost of performing a comprehensive mycotoxin screen by detecting 31 mycotoxins in a single analysis run.

A proposed European Community regulation sets a maximum level of 1000ug/kg for fumonisins (FB1/FB2) in corn oil, making it more important than ever to develop a comprehensive mycotoxin screen. Development of a comprehensive screen is a demanding challenge because of the wide range of chemical and physical properties of the individual mycotoxins and the large number of naturally occurring food constituents that may be extracted along with the mycotoxins and interfere with separation and detection.

Traditional methods for detecting and quantifying low levels of mycotoxins are specific to individual mycotoxins, so it is time-consuming, difficult and expensive to carry out a comprehensive screen. Earlier GPC-based methods have been based on commonly-used polystyrene polymer beads, which are suitable for zeralenone (ZEA), ochratoxin A (OTA), aflatoxins and trichothecenes. However, this material does not provide sufficient selectivity to separate fumonisins (FB1/FB2) from the oil fraction.

C. Gottschalk and J. Bauer of Munich Technical University, J. Barthel and G. Engelhardt of the Bavarian Health and Food Safety Authority and U. Aulwurm of LCTech worked together to develop a method to detect 31 different mycotoxins, including ZEA, fumonisins, trichothecenes (types A, B and D), aflatoxins, ochratoxin A and other mycotoxins, from edible oils. The new method relies on the fact that mycotoxins fall into the 200 to 600 molecular weight range and

thus can be separated using GPC from food constituents that have much higher molecular weights.

To develop this comprehensive screen, researchers used the LCTech's GPC ULTRA automated sample cleanup and concentration instrument, which is distributed by Pickering Laboratories in Canada, Mexico, and the United States. They tried a range of different columns and found that the LCTech's MykoClean column successfully separated all 31 analytes from the oil. The researchers studied influencing factors such as the eluent composition, pH, temperature and the column loading capacity. The recoveries obtained with the combined GPC-LC-MS/MS method range between 74% and 104%. The limits of quantification achieved with the new method comply with the maximum levels for analytes regulated by EC 1881/2006 regulations from December 19, 2006.

For additional detail,
poster at :

http://www.pickeringlabs.com/pdf/080425-ua-Poster_30_Mykotoxin_Workshop1.pdf

About the GPC ULTRA

The GPC ULTRA is designed for removing fats, proteins, and other large bio-molecules from samples to prevent interference in the analysis of mycotoxins, chlorinated hydrocarbon pesticides, polychlorinated biphenyls (PCBs), antibiotics, polycyclic aromatic hydrocarbons (PAHs) and other semi-volatile compounds. The GPC ULTRA features a unique rotary evaporation chamber that combines a silicon oil bath and precise heat transfer with a laser-directed volume control for precision evaporation of solvents. It also includes an auto sampler, precision pumps and valve injection system, a sample loop and a matched GPC column. Vario PC software controls and monitors the instrument's operation. (For additional detail, see http://www.pickeringlabs.com/catalog/sample_preparation_GPC_ULTRA.htm)

About LCTech

LCTech GmbH, based in the Bavarian town of Dorfen, develops and distributes innovative products and methods for the preparation and analysis of food, feed and environmental samples. The range of products covers GPC systems as well as solutions for the analysis of mycotoxins. Worldwide, LCTech is represented by a well-developed distributor network

Globally, public and private laboratories in the food and feed industries and in pharmacy and research rely on the modern and efficient products and individual service guaranteed by LCTech. For further information, please visit www.LCTech.de

About Pickering Laboratories

Pickering Laboratories is a pioneer in biochemical reagents and instrumentation. For 25 years, Pickering has developed applications required by government and private laboratories. Pickering leadership in both the design and manufacture of biochemical reagents and instrumentation assures the quality of both. With the addition of LCTech mycotoxin products to the company's product line, Pickering now enables customers to analyze and process mycotoxins with more tools from a known source of quality products and excellent service.

Pickering's team of dedicated research and application chemists, engineers, operational specialists, and experienced managers produce and sell direct and through 87 distributors in 150 countries in North and South America, Europe, the Middle East, Africa, Asia, and the Caribbean.

Headquarters are in Mountain View, California. For additional information, please visit www.pickeringlabs.com

For future information on research and products by Pickering Laboratories, please see www.lctech.de

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Note to Editors:

For a poster describing the research above, please see http://www.pickeringlabs.com/pdf/080425-ua-Poster_30_Mykotoxin_Workshop1.pdf

Graphics and images from the poster are available upon request. Please contact Linda Marchant at 919-451-0776 or linda.marchant@cayennecom.com

Keywords: Mycotoxin, toxin, edible oil, fumonisin, FB1/FB2, pesticide, laboratory equipment, gel permeation chromatography, GPC, sample clean-up, immunoaffinity column, ELISA test kit, mycotoxin testing, aflatoxin analysis, ochratoxin analysis, environmental testing