

PT14 Fast Analysis for Aflatoxins Without derivitization Using UltraPerformance LC®

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Aflatoxin, Food, Fluorescence

UPLC can provide low level detection without the need for post column derivatization.

Aflatoxins are toxic metabolites of the molds *Aspergillus Flavus* and *Aspergillus Parasiticus*. They are designated as G2, G1, B2 and B1, with B1 being the most toxic and abundant. These aflatoxins occur in a wide range of food stuffs including nuts, seeds, dried fruits, spices and grains. Due to their toxicity, most countries, including the European Union, have established permissible levels in foodstuffs and require testing for compliance.

Traditional methods of analysis for aflatoxins incorporate reverse phase HPLC with fluorescence detection. However the fluorescence of aflatoxins G1 and B1 is quenched in aqueous solvents and must be enhanced. Methods for this enhancement include pre column derivatization with trifluoroacetic acid (TFA) or post column with iodine, electrolytically generated bromine (Kobra Cell) or UV light.

The poster shows that using UltraPerformance LC® in combination with an ACQUITY FLD detector with a large volume flow cell, required detection limits can be achieved without resorting to any pre or post column derivatization step. The applicability of this method to food matrices will be illustrated.