

Development of Analysis Methods for the Determination of Polycyclic Aromatic Hydrocarbons in Food by UHPLC

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Polycyclic aromatic hydrocarbons (PAH) are a vast group of ubiquitous environmental contaminants. Many of them are considered carcinogenic.

Commission Regulation (EC) No 1881/2006 sets maximum levels for benzo[*a*]pyrene (BaP) in foodstuff, while the performance criteria for analytical methods used to verify compliance of food is laid down in Commission Regulation (EC) No 333/2007. The European Commission recommended analysing food for 15 additional PAHs.

High performance liquid chromatography (HPLC) with UV and fluorescence (FLD) detection is routinely applied for the determination of PAHs in food and environmental samples. Recent developments in the field of analytical instrumentation offer new possibilities with regard to detection power and sample throughput.

The objectives of this work was to develop an analytical method based on ultra-high performance liquid chromatography (UHPLC) for the determination of EU priority PAHs in food and to characterise their chromatographic separation under optimised conditions on different commercial sub-2 μm columns.