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Development of FPSE-HPLC-UV method for analysis of xenobiotics in environmental and canned food samples

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This paper narrates a novel fabric phase sorptive extraction-high performance liquid chromatography-ultra visible detection (FPSE-HPLC-UV) method for the simultaneous extraction and analysis of xenobiotics that include various organotin derivatives as well metal ion complexes in environmental (agricultural waste water and municipal waste water) and canned food sample. The selected analytes were well resolved by waters nova pack C18 column (3.9 x 150 mm, 4 μ m) in isocratic elution mode within 15 minutes. The new microextraction media has been analytically evaluated using these derivatives as model compounds. The factors affecting the extraction efficiency of FPSE have been probed and the optimized extraction conditions have been determined. Under these optimum conditions, the limits of detection (LODs) for sol-gel C18 coated FPSE media in combination with HPLC-UV for the analysis of the phenyltin derivatives were in the range of 10-100 ng/mL with precision (relative standard deviation) at 10 ng/mL concentration with good absolute recoveries and less relative standard deviation. To the best of our knowledge, this is the pioneer FPSE extraction procedure applied on environmental and canned food sample for the simultaneous determination and could be mimic as a rapid and robust green analytical tool.

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