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Synthesis of an imprinted polymer for the determination of methylmercury in marine products

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ABSTRACT

A molecularly imprinted polymer was synthesized using the precipitation method with methylmercury chloride as the template, phenobarbital as ligand, methacrylic acid (MMA) as monomer, and ethylene glycoldimethacrylate (EDMA) as cross-linking agent. The MIP was characterized using elemental analysis, infrared spectroscopy, energy dispersive X-ray fluorescence and scanning electron microscopy. The operating conditions for solid phase extraction (SPE) were optimized in column mode (pH, loading and elution flow rate using 1M thiourea in 1M HCl). The polymer was used for analyzing the toluene extracts of two reference materials (BCR-463 and TORT-2) with good accuracy.

Keywords. Methylmercury, molecularly imprinted polymer (MIP), SPE, HRCSSAAS, fish

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