

Solid-Phase Extraction of Caffeine and Catechin Compounds from Green Tea by (+) Catechin Molecular Imprinted Polymer

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In this work, the caffeine and some catechin compounds + C, EC, and EGCG were extracted from green tea by using molecular imprinted polymers (MIP) as sorbent materials in a solid-phase extraction (SPE) process known as MISPE (molecular imprinted solid-phase extraction). For synthesis of MIP, (+) catechin was employed as the template, AM as the monomer, EGDMA as the crosslinker, and AIBN as the initiator. A solution of catechin (0.2 mg/ml in methanol) was utilized in the solid extraction cartridges following loading, washing, and elution procedures with acetonitrile, methanol, and methanol/acetic acid (90/10, %v/v) as the solvents, respectively. This solid-phase extraction protocol was applied for the extraction of caffeine and some catechin compounds from green tea. Quantitative analysis was conducted by high performance liquid chromatography (HPLC) using a C18 column (5 μ m, 250 \times 4.6 mm) with methanol/water (40/60, %v/v) as the mobile phase at a flow rate of 0.5 ml/min.