

HPLC Separation characteristics of molecular-imprinted poly(methacrylic acid) beads prepared by suspension polymerization

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The suspension polymerization that used perfluorocarbon liquid as the dispersing phase is promising to provide recognition sites because it gives no interaction between functional monomers or template and dispersing agent during molecular imprinting. The monomer of methacrylic acid (MAA) was crosslinked with ethylene glycol dimethacrylate (EGDMA) in the presence of a template of all-trans retinoic acid to prepare molecular imprinted polymers. The prepared molecular imprinted polymer beads showed good performance in the HPLC separation of retinoid derivatives. Specific interactions such as hydrogen bonding and ion-pair interactions were the main functions for separation of objective molecules. The bead size distribution and performance in the HPLC separation according to the amount of surfactant were also investigated.