Selective Separation of 2,4-dichlorophenoxyacetic acid Using Molecular Imprinting Technique

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Polymers that can separate 2,4-dichlorophenoxyacetic acid(2,4-D) as main material of pesticide were synthesized by molecular imprinting technique. Molecular imprinting polymers (MIPs) for selective separation of 2,4-D were synthesized using styrene and 4-vinylpyridine (4-VPy) as functional monomer and divinylbenzene (DVB) as crosslinker. The adsorption characteristics were investigated by adsorbed on MIPs imprinting to 2,4-D as template to structurally similar materials, i.e o-toluic acid, m-toluic acid, p-toluic acid, aspirin, benzoic acid, 1-naphtol, and 1-naphthoic acid. The results showed that when adsorbed 2,4-D and each structurally similar materials, MIPs imprinted on 2,4-D were adsorbed well. This verifies that the MIPs that can adsorb template selectively were synthesized. Also, effect of functional monomer contents, crosslinker contents were investigated. All the adsorption experiments were carried out until the equilibrium was attained for every MIPs.