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Molecularly Imprinted Polymers as b-sitosterol selective adsorbent using combination of Methacrylate Acid and Trimethylpropane Trimethacrylate

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Abstract : The research aim was to syntheze Molecularly Imprinted Polymers (MIP) that has a memory effect on β- sitosterol. The synthesis was conducted through a bulk polymerization process using a methacrylic acid monomer (MAA), trimethyl propane trimethacrylate (TRIM) as a cross linker and β-sitosterol as a template. The MIP was used as a selective adsorbent of β-sitosterol. Characterization of MIP was performed using FTIR, SEM, and TGA. The β-sitosterol adsorption ability of MIP optimized at various pH and time. The amount of β-sitosterol adsorbed by MIP was analyzed using HPLC. The FTIR spectrum shows that functional groups that play a role in MIP formation are OH, C=C and C=O. The MIP morphological shape was spherical like a ball with a particle diameter size of about 2.5 μm and the surface of MIP was rougher than NIP. The analysis results of HPLC proven that MIP was able to adsorb β-sitosterol better than NIP.
Key words : Synthesis, MIP, TRIM, MAA, β-sitosterol, cross-linker.

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