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Molecularly imprinted polymeric nanoparticle: Preparation and characterization

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Molecularly imprinted polymer (MIPs) is investigated by different research groups in a varied time. MIPs are preferred because of its resist on a high temperature, extreme pH values and organic solvent. MIPs are prepared by the polymerization of a functional monomer and crosslinker in the presence of target molecule. It is a process which prepared by replicate the target molecules high affinity receptor regions on polymers. After the polymerization, the templates are removed from the polymer, leaving specific recognition sites complementary in size and shape to the template molecule. Thus it can be used as a plastic antibodies which have been produced by molecular imprinting technique and mimics antibodies functions. For this purpose Diphtheria toxin has been chosen as a target molecule. MIP is performed by using classical two phase mini emulsion polymerization technique. After the polymerization, obtained nanoparticles is removed from the target molecule by dialysis membranes. The morphology and size control of the nanoparticles were characterized by Scanning electron microscopy (SEM) and Dynamic Light Scattering (DLS). The nanoparticles have highly monodisperse and regularly spherical shaped, which have an average diameter of about 200-300 nm.

Biography

Merve Yaşar has graduated at Chemistry Department from Marmara University in 2014. She is currently pursuing her Master degree. At the same time, she is pursuing Tubitak project which is 115S224.

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