Review

Electrochemical Methods Based on Molecularly Imprinted Polymers for Drug Detection. A Review

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Molecular imprinting of polymers is a state of the art procedure for producing artificial biomimetic receptors with high selectivity towards the selected molecules. Compared to the biological receptors, molecularly imprinted polymers are more stable, easy to prepare, and can be used under harsh conditions, these being the main reasons why their use in chemical and bioanalytical applications has been gaining in interest in the last decades. The main steps in molecular imprinted polymer synthesis from the selection of the reagents to the choice of the polymerization method are summarized. Furthermore, the binding mechanisms between the analyte and the molecules of the monomer during the electrochemical polymerization process and the molecularly imprinted polymer during the detection process, as well the detection techniques are discussed. All discussions present a critical point of view of the authors and are focused on drug detection.

Keywords: molecular imprinted polymers; electrochemical sensors; drug analysis

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