

Pharmaceutical Technology Perspectives

Muhammad Taher



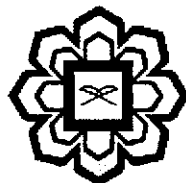
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Editor

Muhammad Taher



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CHAPTER 5

POLYPYRROLE-PEG COMPOSITE FILM FOR DRUG DELIVERY

Khadijah Edueng

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The development of polypyrrole-based drug delivery system has gained popularity in the recent years. This is mainly contributed by the unique redox properties of the polypyrrole (Ppy) polymer which permit the movement of ions through it via transfer of electrons. The applicability and processibility of Ppy nevertheless possesses remarkable challenges not only in the synthesis of the polymer, but also its applications, especially in pharmaceutical research field. The combination of Ppy with the widely used polymer in pharmaceutical dosage forms design, polyethylene glycol (PEG) is therefore thought to overcome these limitations, thus enhances the flexibility and improves the physicochemical properties as well as biocompatibility of the resulted composite film. Synthesis of the composite film is preferably carried out using electrochemical method due to the ability of finer control over the variety of parameters that might affect the quality of the film physically and chemically alike. Different types of bioactive may be embedded into the film; proteins and small molecules to name a few. Such composite film offers a great promise as a drug reservoir in the establishment of wireless magnetically steered drug delivery system using magnetic metal, which could be implanted into the body via minimally invasive procedure.