



## Potential Use of Cellulose Acetate Butyrate and Pluronic F68® Blends in the Modulation of the Diclofenac Sodium Release from Microspheres

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**SUMMARY.** Microspheres were prepared using the emulsion/solvent evaporation method with the aim of obtaining diclofenac sodium (DFS) prolonged release dosage forms. The effects of the drug:polymer ratio and addition of Pluronic F68® to the formulations on drug content, particle size and DFS release rate were evaluated using a 2<sup>2</sup> factorial design. The DFS encapsulation efficiency (%) and the drug content varied from 40 to 70 % and from 4.5 to 13 mg/100 mg, respectively. The mean particle diameter varied from 720 to 850 μm. The addition of Pluronic F68® to the formulations led to an increase in the roughness of the surface. The differential scanning calorimetry (DSC) and infrared spectroscopy (FTIR) studies indicated the presence of Pluronic F68® in the particles. The statistical analysis revealed that the drug content and the release rate of DFS were significantly increased when 1:4 drug:polymer ratio and Pluronic F68® was used to prepare the microspheres.

**KEY WORDS:** Blends, Controlled release, Diclofenac sodium, Microspheres.

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