



## Evaluation of Biodegradable Implants Based on Polymer Blends: Development, Characterization and *In Vitro* Release Studies

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**SUMMARY.** Implants prepared with polymer blends [poly (ε-caprolactone)-poly(lactide), PCL-PLA] at different rates were developed from microspheres. Approximately 19% of dexamethasone acetate was encapsulated into the microspheres, and it was not dependent on polymer characteristics. DSC studies suggested that there is not any signal of interaction between the polymers and the drug and also no influence of any residual solvent in the microspheres. Infrared analysis indicated the chemical stability of the drug even in the blend matrix. The developed devices present low degradation rate. 34% and 21% of dexamethasone acetate was released from PLA and PCL alone implants at 10 weeks, respectively. Intermediate amounts were released from the devices prepared at different PLA-PCL ratios in such a way that the higher the amount of PCL, the slower was the drug release. This study demonstrates that polymeric drug delivery systems allowed to a prolonged release of dexamethasone acetate *in vitro*.

**KEY WORDS:** Biodegradable implants, *In vitro* study, Microspheres, Polymer blends.

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