



Validation of an HPLC Method for quantitative Determination of Benzocaine in PHBV-Microparticles and PLA-Nanoparticles

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SUMMARY. Benzocaine (BZC) is an ester-type local anesthetic used mainly in topical, dermal and mucosal formulations. The present work consists of the development and validation of analytical methodology for evaluation of benzocaine content in the micro and nanoparticles produced by biodegradable polymers (polyhydroxybutyrate-co-hydroxyvalerate and poly-(L-lactide) by HPLC. The validation was done using the reversed-phase C18 column, using a mobile phase consisting of acetonitrile/water 50:50 (v/v), flow rate of 1.5 mL/min and UV-vis detector at 285 nm. The results here obtained showed that the analytical methodology is accurate, reproducible, robust and linear over the molar range concentration of 10-100 μ M of benzocaine. The limit of quantification and detection was 13.06 μ M and 3.92 μ M, respectively. The encapsulation efficiency of benzocaine in PHBV microspheres and PLA nanocapsule were 40% and 70%, respectively. The method developed was applied in the analysis of benzocaine in micro and nanoparticle systems and showed to be efficient, yielding good results. Here, this method was used to evaluate the encapsulation efficiency of benzocaine and will be used in next studies with different micro/nanoparticle formulations.

KEY WORDS: Benzocaine, HPLC, Local anesthetic, Microspheres, Nanocapsules.

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