



Development of a New Chitosan Based Nanomaterial for Controlled Delivery of Prilocaine

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SUMMARY. Prilocaine is a local anaesthetic compound and methemoglobinemia may occur after its administration. In some cases, it may lead to dyspnoea, dysrhythmia, seizures and coma. Chitosan (CS) nanoparticles are potential vehicles for controlled delivery of drugs and have the capacity to protect sensitive bioactive materials from enzymatic and chemical degradation *in vivo*. The purpose of this study was to prepare and characterize prilocaine-loaded CS nanoparticles and evaluate their potential for reducing side effects in local anaesthetic applications. Prilocaine-loaded CS nanoparticles are evaluated for their particle size, zeta potential, drug loading capacity and release properties. Quantification of the prilocaine was carried out with a validated gas chromatography method. According to the data obtained, these chitosan-based prilocaine nanoparticles may open an interesting perspective for localised delivery of prilocaine, thus reducing side effects.

KEY WORDS: Chitosan, Controlled drug delivery, Prilocaine.

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