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Título	Bupivacaine in alginate and chitosan nanoparticles: an in vivo evaluation of efficacy, pharmacokinetics, and local toxicity
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Resumo	Objective: This study reports a preclinical evaluation of an alginate/chitosan nanoparticle formulation containing NovaBupi®, a racemic bupivacaine (BVC) containing 25% dextrobupivacaine and 75% levobupivacaine. Methods: New Zealand White rabbits (n=6) received intraoral or intrathecal injections of BVC 0.5% or BVC 0.5%-loaded alginate–chitosan nanoparticles (BVCALG). BVC plasma levels and pharmacokinetic parameters were determined in blood samples of these rabbits. An infraorbital nerve blockade was performed in male Wistar rats (n=7) with the same formulations and the vehicle (NPALG). Histological evaluation of local toxicity after 6 hours and 24 hours of the treatments was performed in rats' (n=6) oral tissues. Results: No statistically significant difference was observed between plasma concentrations and pharmacokinetic parameters ($p>0.05$) after intraoral injections. However, after intrathecal injection BVCALG changed approximately three times the values of volume of distribution and area under the curve (AUC0–t; $p<0.05$). The total analgesic effect of BVC after infraorbital nerve blockade was improved by 1.4-fold ($p<0.001$) with BVCALG. BVC and BVCALG did not induce significant local inflammatory reaction. Conclusion: The encapsulation of BVC prolongs the local anesthetic effect after infraorbital nerve blockade and altered the pharmacokinetics after intrathecal injection.
Fomento	