04-016

KEToprofen LOADED IN Natural RUBBER LATEX TRANSdermal PATCH FOR TENDINITIS TREATMENT

Floriano, J.F.(1); Barros, N.R.(2); Cinman, J.F.(1); Gemeinder, J.L.P.(1); Da Silva, R.G.(1); Loffredo, A.V.(3); Borges, F.A.(2); Norberto, A.Q.(4); Graeff, C.F.O.(1); Herculano, R.D.(1);
(1) UNESP; (2) FCF-UNESP; (3) Unesp; (4) USP;

Introduction: Ketoprofen is an analgesic with potent anti-inflammatory activity against acute inflammation, subacute inflammation, for the acute and long-term treatment of various inflammatory pathologies, as rheumatoid arthritis and colonic adenocarcinoma. In order to minimize the incidence of systemic events related to ketoprofen, the transdermal drug delivery system development has been most important. The advantages of using natural rubber latex include not only the reduction of adverse systemic events, but also the suitability of the low cost of the material together with its physicochemical properties such as flexibility, mechanical stability, surface porosity and water vapor permeability, and besides being a biocompatible material also presents biological activity to stimulate the angiogenesis, being able to be used in tissue repair. Results: This study demonstrated that ketoprofen were successfully incorporated into latex membranes for drug delivery. FTIR indicated that the drug did not interact chemically with the membrane. Moreover, the latex membranes released 60% of the ketoprofen incorporated in 50 hours. SEM images indicated that a portion of the drug was present on the membrane surface, being this portion responsible for the burst release. The tensile tests showed that the addition of the drug into the latex membrane had no influence on the mechanical behavior of the polymer. In addition, drug-latex membranes presented no red blood cell damaging effects. Conclusions: Our data shows that the ketoprofen loaded latex membranes are a promising system for sustained drug delivery which can be used to minimize the adverse side effects of high dose systemic drug delivery.