

CHITOSAN INFLUENCE IN DRUG DELIVERY FOR GLUCANTIME IN PVP MEMBRANES

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Abstract

Polymeric hydrogels are receiving much attention in the past few years, as intelligent materials due to their properties applicable as biomaterials. In this work, hydrogels of poly (N-2-vinyl-pyrrolidone) (PVP) containing chitosan and clay nanoparticles were obtained and characterized to investigate chitosan influence on Glucantime drug delivery. The matrixes were crosslinked by gamma irradiation process with doses of 25 kGy. Hydrogels morphologies were observed by Scanning Electron Microscopy (SEM) and Atomic Force Microscopy (AFM). The structural properties of the network were determined by gel fraction and swelling kinetic at 22°C to study the capacity of water retention and, finally, drug delivery tests were performed "in vitro". The system showed higher gel fraction for the matrix with 1.0% of clay and 0.5% of chitosan. In this case, besides the interactions of clay ions with PVP, there are interactions of chitosan amine group with PVP amide group. The crosslink between these components also has influence on mechanical properties of hydrogel. The results of glucantime delivery at the chitosan/PVP and clay system will be discussed.

Keywords: *Hydrogels, clay, nanocomposite*

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