

# MEMBRANES OF HIDROGELS OF PVAI/ CLAY BY GAMMA RADIATION

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## ABSTRACT

In the last decades several studies that investigate new methods for drug delivery system have been realized. This new field known as "smart therapy" involves devices and drug delivery systems to detect, identify and treat the site affected by the disease, without interfering with the biological system. The Cutaneous Leishmaniasis is an endemic disease that is characterized by the development of single or multiple localized lesions on exposed areas of skin. The aim of this study was to obtain polymeric hydrogel matrices of poly (vinyl alcohol)(PVAI) and chitosan with inorganic nanoparticles, which can release a drug according to the need for treatment of injury caused by leishmania skin. The hydrogels matrices were obtained with PVAI/chitosan and PVAI/chitosan 1.0, 1.5% clay laponite RD, crosslinked by ionizing gamma radiation with dose of 25 kGy. The techniques used for characterization were swelling, gel fraction, scanning electron microscopy (SEM) and thermogravimetry (TG). After synthesis, the samples were immersed in distilled water and weighed in periods of time until 72h for the swelling determination. The obtained results have indicated that the swelling of the membranes increases with clay concentration, in consequence of ionic groups present in the clay, figure 1.

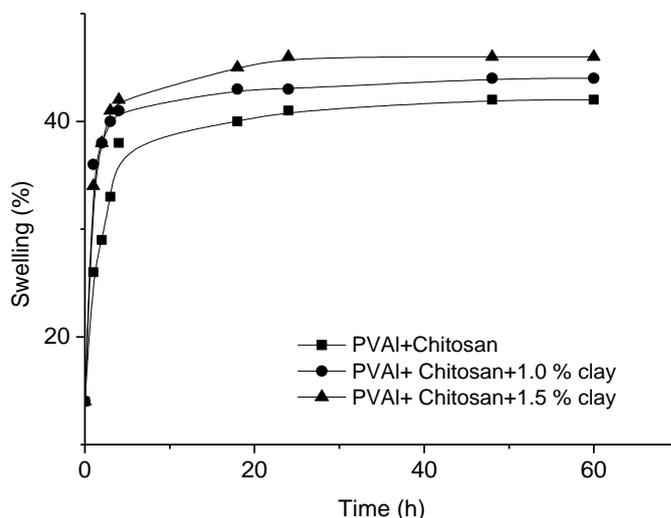


FIGURE 1 - PVAI / chitosan hydrogels with 1.0 and 1.5 % clay concentrations were crosslinked by ionizing radiation of gamma source.

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