



PRODUCTION AND PLASMA MODIFICATION OF NATURAL RUBBER MEMBRANES WITH ADDITION OF RED PROPOLIS AND SILVER FOR BIOMEDICAL APPLICATIONS

Ana Elisa Dotta Maddalozzo (PIBIC-CNPq), Charlene Garcia, Marcelo Giovanela, Mariana Roesch-Ely, João Antonio Pêgas Henriques, Cesar Aguzzoli, Janaina da Silva Crespo (Orientador(a))

Nowadays, the search for new materials for biomedical applications has been gaining ground in science and industry. In this context, this work aims to combine the properties of three known biomaterials, such as natural latex, silver and red propolis. Natural rubber has gained prominence because of its properties such as wound healing and biological actions that promote angiogenesis (formation of new blood vessels). Silver as a nanoparticle has been widely used because of its bactericidal properties and low toxicity to human cells. Also antimicrobial, red propolis is a resinous substance constituted of exudates of diverse plants. Due to its complex and variable chemical composition, several biological activities are described in the literature, such as anticariogenic, anti-inflammatory, antioxidant and antitumor. The objective of this work is to produce membranes of natural latex with addition of red propolis and silver to help the treatment of people who have difficulty in healing. In addition, one of the main goals of this study is the treatment of the surface of the membranes using plasma, so that its surface acquires a hydrophilic character (favorable condition in the biomedical application). A dressing which has a hydrophilic surface favors the absorption of wound exudate, minimizing the risk of infections and biofilm formation. The physico-chemical and biological characterization showed that the membranes with modifications were more hydrophilic than the pure latex membrane, are sterilized after being exposed to vacuum and plasma, besides being bacteriostatic and not presenting cytotoxicity. It is possible to tell, also, that there is evidence that silver is in the form of nanoparticles, the ideal configuration for the biomedical application.

Palavras-chave: Red propolis, natural rubber e silver

Apoio: UCS, CNPq