

Accepted Manuscript

Polysaccharide-based film loaded with vitamin C and propolis: A promising device to accelerate diabetic wound healing

Guilherme T. Voss, Matheus S. Gularte, Ane G. Vogt, Janice L. Giongo, Rodrigo A. Vaucher, Joanna V.Z. Echenique, Mauro P. Soares, Cristiane Luchese, Ethel A. Wilhelm, André R. Fajardo

PII: S0378-5173(18)30745-2
DOI: <https://doi.org/10.1016/j.ijpharm.2018.10.009>
Reference: IJP 17827

To appear in: *International Journal of Pharmaceutics*

Received Date: 25 June 2018
Revised Date: 13 September 2018
Accepted Date: 6 October 2018

Please cite this article as: G.T. Voss, M.S. Gularte, A.G. Vogt, J.L. Giongo, R.A. Vaucher, J.V.Z. Echenique, M.P. Soares, C. Luchese, E.A. Wilhelm, A.R. Fajardo, Polysaccharide-based film loaded with vitamin C and propolis: A promising device to accelerate diabetic wound healing, *International Journal of Pharmaceutics* (2018), doi: <https://doi.org/10.1016/j.ijpharm.2018.10.009>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Polysaccharide-based film loaded with vitamin C and propolis: A promising device to accelerate diabetic wound healing

Guilherme T. Voss^a, Matheus S. Gularte^b, Ane G. Vogt^a, Janice L. Giongo^c, Rodrigo A. Vaucher^c, Joanna V. Z. Echenique^d, Mauro P. Soares^d, Cristiane Luchese^a, Ethel A. Wilhelm^{a*}, and André R. Fajardo^{b*}

^aLaboratório de Pesquisa em Farmacologia Bioquímica (LaFarBio), Universidade Federal de Pelotas (UFPel), Campus Capão do Leão, 96010-900, Pelotas-RS, Brazil.

^bLaboratório de Tecnologia e Desenvolvimento de Compósitos e Materiais Poliméricos (LaCoPol), Universidade Federal de Pelotas (UFPel), Campus Capão do Leão s/n, 96010-900, Pelotas-RS, Brazil.

^cLaboratório de Pesquisa em Bioquímica e Biologia Molecular de Micro-organismos (LaPeBBioM), Universidade Federal de Pelotas (UFPel), Campus Capão do Leão s/n, 96010-900, Pelotas-RS, Brazil.

^dLaboratório Regional de Diagnóstico Faculdade de Veterinária, Universidade Federal de Pelotas (UFPel), Campus Capão do Leão s/n, 96010-900, Pelotas-RS, Brazil.

*Corresponding authors:

André R. Fajardo

Programa de Pós-graduação em Química (PPGQ), Centro de Ciências Químicas, Farmacêuticas e de Alimentos, Universidade Federal de Pelotas (UFPel), Campus Capão do Leão, 96010-900, Pelotas, RS, Brazil.

E-mail: andre.fajardo@pq.cnpq.br - Phone: +55 53 3274-7356

Ethel A. Wilhelm

Programa de Pós-graduação em Bioquímica e Bioprospecção (PPGBBio) Centro de Ciências Químicas, Farmacêuticas e de Alimentos, Universidade Federal de Pelotas (UFPel), Campus Capão do Leão, 96010-900, Pelotas, RS, Brazil.

E-mail: ethelwilhelm@yahoo.com.br - Phone: +55 53 3274-7356

Abstract

Wound healing can be a painful and time-consuming process in patients with *diabetes mellitus*. In light of this, the use of wound healing devices could help to accelerate this process. Here, cellulose-based films loaded with vitamin C (VitC) and/or propolis (Prop), two natural compounds with attractive properties were engineered. The starting materials and the cellulose-based films were characterized in detail. As assessed, vitamin C can be released from the Cel-PVA/VitC and Cel-PVA/VitC/Prop films in a controlled manner. *In vitro* antibacterial activity studies showed a reduction of bacteria counts (*Escherichia coli* and *Staphylococcus aureus*) after Cel-PVA/VitC, Cel-

Download English Version:

<https://daneshyari.com/en/article/11023130>

Download Persian Version:

<https://daneshyari.com/article/11023130>

[Daneshyari.com](https://daneshyari.com)