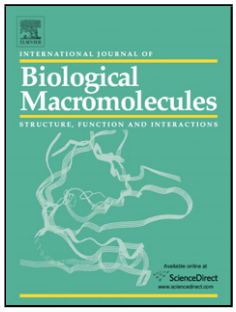

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PII: S0141-8130(17)31820-2
DOI: https://doi.org/10.1016/j.ijbiomac.2017.10.061
Reference: BIOMAC 8356

To appear in: *International Journal of Biological Macromolecules*

Received date: 22-5-2017
Revised date: 30-8-2017
Accepted date: 5-10-2017

Please cite this article as: Zhina Hadisi, Jhamak Nourmohammadi, Seyed Mahdi Nassiri, The antibacterial and anti-inflammatory investigation of Lawsonia Inermis-gelatin-starch nano-fibrous dressing in burn wound, International Journal of Biological Macromolecules https://doi.org/10.1016/j.ijbiomac.2017.10.061

The antibacterial and anti-inflammatory investigation of *Lawsonia Inermis*-gelatin-starch nano-fibrous dressing in burn wound

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Highlights

- Henna-gelatin-oxidized starch nanofibers wound dressing were prepared.
- The fiber dimeter was reduced with increasing henna content.
- Cell attachment, proliferation and collagen secretion enhanced with henna.
- Henna-loaded nanofibers accelerated burn wound closure with reducing inflammation.

Abstract

The aim of this study was to develop a new bioactive gelatin-oxidized starch nanofibers containing *Lawsonia Inermis* (henna) for treating second-degree burn wounds. Continuous, smooth, and bead-free fibers were obtained when the gelatin-starch ratio was 70/30. Additionally, the fiber dimeter was reduced with increasing henna content. The successful loading of henna in the gelatin-oxidized starch nanofibers was approved using Fourier transform infrared spectroscopy and Differential scanning calorimetry. Moreover, the addition of henna to the gelatin-oxidized starch nanomatrix enhanced fibroblasts attachment, proliferation, collagen secretion, and