



Università degli Studi di Roma “Tor Vergata”

Dipartimento di Scienze e Tecnologie Chimiche

Via della Ricerca Scientifica, 1 - 00133 Roma (IT) - Tel +39 06 72594337 Fax +39 06 72594328

AVVISO DI SEMINARIO

La Dr.ssa Annalisa Neri

Principal Scientist at Welland Medical Ltd (London, UK)

il giorno 19/12/2018 alle ore 14 : 30

Nell' Aula seminari del Dipartimento di Scienze e Tecnologie Chimiche

Terrà un seminario dal titolo:

“Collagen-Honey Films: A Novel Combination For The Management Of Hard-To-Heal Wounds”

Proponente: Prof.ssa Sonia Melino

Dr. Annalisa Neri



Annalisa works as Principal Scientist at Welland Medical Ltd (London, UK). After completing her bachelor's and master's degree at the University of Roma Tor Vergata, she received her PhD in Materials Science and Engineering at Imperial College London in May this year. Her work focuses on materials for the treatment of hard-to-heal wounds. Particularly, she is investigating the combination of collagen and Manuka honey for the fabrication of an active wound management dressing.

Abstract

COLLAGEN-HONEY FILMS: A NOVEL COMBINATION FOR THE MANAGEMENT OF HARD-TO-HEAL WOUNDS

A. Neri^a, A. Moavenian^a, E. Saiz^b

^a Welland Medical Ltd, Hydehurst Lane, Crawley, West Sussex, RH10 9AS, UK

^b CASC, Centre for Advanced Structural Ceramics, Dept of Materials, Imperial College, London, SW7 2AZ

Wound care, is an extremely challenging field, particularly in the management of chronic hard-to-heal wounds. Chronic wounds are characterised by recurring infections, prolonged inflammation phase and high levels of proteolytic enzymes impairing the normal process of healing. A dressing that actively promotes healing and prevent infection in these difficult wounds is still required; to address this problem a novel formulation based on collagen combined with honey is presented in this work. The combination of collagen's weak antigenicity, biodegradability and potentiality in the termination of the chronic state of a wound [1] along with the anti-inflammatory and anti-bacterial power of honey seems promising for this purpose [2].

A process for the production of collagen-based films has been developed. Samples were obtained mixing Bovine Type I Collagen with varying amounts of Manuka honey. The chemical composition, homogeneity, microstructure degradation kinetic and mechanical behaviour of the films has been extensively investigated and related to their suitability as wound dressings. *In vitro* studies suggest that the collagen-honey films provide good cell viability and proliferation of human skin fibroblasts and keratinocytes while inhibiting bacteria growth for *Staphylococcus aureus* and *epidermidis*. The results obtained from the characterisation of the collagen-based films suggest that they are remarkably promising for wound healing application.

References:

[1] Fleck, C. A. and R. Simman (2010). "Modern collagen wound dressings: function and purpose." J Am Col Certif Wound Spec 2(3): 50-54.

[2] Bansal V MB, Pandhi P. Honey--a remedy rediscovered and its therapeutic utility. Kathmandu Univ Med J (KUMJ). 2005;3(3):305-9