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Development of Novel Hemostatic Biomaterial for Fast Injury Treatment

Nassima Chekrouna^a, Houcine Ziani Cherifa^{a*}, and Abdelhamid Cherfaouib^b

Abou Bekr Belkaid University, Faculty of Sciences, Department of Chemistry, Tlemcen, Algeria^a

Les Laboratoires Frater-Razes, Saoula Algiers, Algeria^b

*Corresponding author email: immohzc@gmail.com

Abstract

In Algeria, in 2022 there were over 1100 death and 40.000 wounded as a result of traffic accidents alone [1]. There are no data available for other professional or occasional wounds leading to serious bleeding which may eventually cause a life-threatening trauma. Thus, there is an urgent need for highly potent hemostatic device, readily available over the counter or for the technically qualified agents involved in public health care.

Efficient and highly potent hemostatic biopolymer-based composites were reported in the literature [2, 4]. However, a severe lack of these devices on the local market prompted us to embark on a development program of new hemostatic biocomposites using a powerful combination of widely known biopolymers such as chitosan and hydroxyethyl cellulose supplemented with other plants bestowed with special virtues and traditionally known for their hemostatic and wound healing properties.

The composite material was developed in a variety of versatile delivery forms such as powder, film or gel depending on the nature and size and depth of the notch. The preparation and characterization of the new biocomposite are presented.

Keywords:

Biocomposite, Chitosan, Hemostasis, Hydroxyethylcellulose, Wound healing.

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