Healing Activity Induced by Cramoll 1,4 Lectin in Second Degree Burns: Animal Model


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Cramoll 1,4 is a specific glucose/mannose lectin, extracted from Cratylia mollis Mart. seeds, a native plant from North-Eastern, Brazil and it was broadly evaluated in different biological applications. This study aimed to investigate the wound-healing efficiency of Cramoll 1,4 hydrogel in an animal model for second-degree burns. Twenty male rats were randomly divided into two groups (G1 = treatment with hydrogel containing 100 µg/ml Cramoll 1,4; and G2 = Control, treatment with hydrogel). For 35 days, it was effectuated clinical evaluation of the injury and on the 7, 14, 21, 28 and 35 days after burn induction, under anesthesia, the injuries were evaluated regarding the contraction area, lesion re-epithelialization degree and tissue excision for histopathological assessment followed by biochemical and hematological analysis by cardiac puncture, with subsequent euthanasia using thiopental. G1 showed intense exudates, necrosis and edema on the 7th day, tissue reepithelialization and moderate autolysis on the 14th day, intense fibroblastic proliferation, presence of dense collagen and moderate fibrosis on the 21th day, complete tissue epithelialization on the 28th day and modeled dense collagen on the 35th day. There were no significant differences in biochemical and hematological parameters analyzed and significant wound contraction was initiated from day 14 on the G1. The results showed that Cramoll 1,4 hydrogel accelerates the granulation and reepithelialization process and promotes higher percentage of thermal burn contraction compared with the vehicle used as control. These results extended the potential of therapeutic applications of Cramoll 1,4 in the treatment of thermal burns.

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