EVALUATION OF THE HEALING ACTIVITY USING A POLYSACCHARIDE MEMBRANE CONTAINING CRAMOLL 1.4 IN ALLOXAN-INDUCED DIABETIC MICE

Neves, F.P.A.¹; SILVA, R.¹; SILVIA, C. H.¹; ALBUQUERQUE, P. B. S.¹; PAULA, R. A.¹; MELO, M. S.¹; ANDRADE, F. M.¹; LIMA-RIBEIRO, M. H. M.¹; CARNEIRO-DA-CUNHA, M. G.¹; CORREIA, M. T. S.¹.

¹Departament of Biochemistry, Federal University of Pernambuco, Brazil

The Cramoll 1.4, purified from the seeds of Cratylia mollis, improved the retraction of wounds in immunocompromised mice when compared to the control group. This study investigated the healing potential of lectin Cramoll 1.4 associated with polysaccharide membranes induced diabetic mice through the clinical analysis of lesions for 12 days. The lectin was purified by fractionation using ammonium sulphate (40–60% w/v) and the fraction obtained was submitted to affinity chromatography in Sephadex G-75. Lectin evaluation was performed by hemagglutination activity, protein concentration (mg / ml) and protein profile in SDS-PAGE. The xyloglucans and galactomannan polysaccharides were obtained by extraction with ethanol 46% (w/v). Hematologic analysis was performed in all experimental groups to confirm the diabetes, for dosage of glucose. Animals were divided into three groups (n=16) induced diabetes by alloxan (150 mg/kg) intraperitoneally and were anesthetized for the surgical procedure using 2% xilazine chloridrate (10 mg/kg) and 10% ketamine chloridrate (115 mg/kg) in intramuscularly injections. Each wound was treated daily with 100µL of solution, as follows: (C) control, animals topically treated with 0.15 M NaCl; (CG) animals topically treated with galactomannan membrane-Cramoll 1.4 (0.5 mg/mL) and (XC) animals topically treated with xyloglucans membrane-Cramoll 1.4 (0.5 mg/mL). Clinical evaluation showed the presence of wound crust in all animals, however, the groups (XC and GC) showed the formation and detachment of secondary crust earlier. The (C) subsequently presented the presence of secondary crust with heavy exudate. Hematological statistical differences were observed only in relation to platelets (p=0.148) when compared to the others group with the control. Our results showed that healing power of 1.4 Cramoll associated membranes was effective only from a clinical point of view.

Keywords: Cramoll 1.4, polysaccharides, healing, diabetes.

Financial support: FACEPE, CNPq and CAPES