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BIOCHEMICAL AND IMMUNOGENIC PROPERTIES OF ^{60}Co IRRADIATED *Bothrops jararacussu* VENOM

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Proteins irradiation leads to structural alterations, resulting in activity and function loss. This process has been useful to detoxify animal venoms and toxins, resulting in low toxicity products with increased immunogenicity. The *Bothrops jararacussu* venom behaves as a weak immunogen and its lethal activity is not neutralized by either autologous, heterologous or bothropic polyvalent antisera. This venom is markedly myotoxic and the commercial bothropic antiserum does not neutralize this activity, because of the low immunogenicity of the myotoxins. The present work was done in order to evaluate the possibility of irradiating *B. jararacussu* venom, intending to increase the immunogenicity of the myotoxic components. *B. jararacussu* venom samples were irradiated with 500, 1000 and 2000 Gy of ^{60}CO gamma rays. A 2.8 folds decrease of toxicity was observed for the 1000 Gy irradiated sample while the 2000 Gy irradiated sample was at least 3.7 folds attenuated. On the other hand, the 500 Gy dose did not promote any detoxification. Electrophoresis and HPLC data indicate that the irradiation led to the formation of high molecular weight products. The proteolytic and phospholipasic activities decreased in a dose dependent manner, the phospholipases being more resistant than the proteases. The animals (rabbits) immunized with either native or irradiated venom produced native venom binding antibodies, a slightly higher titer being obtained in the serum of the rabbit immunized with the irradiated sample. Western blot data indicate that the anti-irradiated venom IgGs recognized a greater amount of either autologous or heterologous venom bands, both sera behaving as genus specific. The anti-native serum did not neutralize the myotoxic activity of native venom, while the anti-irradiated one was able to neutralize this activity. These data suggest that irradiation promotes alterations of the immunogenic properties of proteins, resulting in an increase of humoral response as well as enhancing the synthesis of antibodies against proteins wich in the native form do not induce efficient immune response.

SUPPORTED BY CNPq

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