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BOTHROPS JARARACUSSU VENOM ANTIGENIC CROSS-REACTIVITY ALTERATIONS INDUCED
BY GAMMA RADIATION

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The Bothrops jararacussu venom acts as a weak immunogen and the antibodies raised against native venom are not able to induce an efficient protective response. On the other hand, toxins attenuated by gamma radiation act as use - full immunogens, inducing an increased protective response when compared with native venom and their fractions. The present work was done in order to determine the most efficient radiation dose to attenuate Bothrops jararacussu whole venom as a first step for obtaining an improved immunogen.

Venom samples (2 mg/ml in 0.15 M NaCl) were irradiated at a dose rate of 570 Gy/h with 500, 1000 and 2000 Gy.

SDS-PAGE analysis under reducing and non reducing conditions showed that several bands between 17 and 70 KD could not be detected in the 1000 and 2000 Gy irradiated samples. DL50 data show a loss of toxicity in a dose-dependent manner. Antigenicity was assayed by double radial immunodiffusion against bothropic and crotalic commercial antisera. Only the 1000 and 2000 Gy samples showed alterations in antigenicity with a decrease in reactivity against bothropic antisera and total loss of reactivity against crotalic antisera. These observations were confirmed by ELISA, suggesting a loss of antigenicity of the PLA₂, coagulant and myotoxic fractions. These data suggest an ideal dose between 500 and 1000 Gy.

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