

ATTENUATION OF TOXINS BY GAMMA RADIATION

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Ionizing radiation are sufficiently energetic to be capable of severing any chemical bond and as result molecules of every substance present in the solution will be chemically changed and their biological properties affected by irradiation. By both direct and indirect action ionizing radiations have been show to cause loss of biological activity, whether this be enzymatic, hormonal or immunological. To exemplificate we tested solution of a pool of crotamine positive Crotalus durissus terrificus venom irradiating with ^{60}Co gamma radiation. Doses of 100, 250, 500, 750, 1000, 1500 and 2000 Gy were used at the dose rate of 1190 Gy/h. The presence of free SH, casein enzymatic hydrolysis, SDS-PAGE, antigenic capacity and toxicity were used to test the properties of irradiated and non irradiated fractions. Antigenic properties were investigated by immunodiffusion and immunoprecipitation the results indicate that antigenicity was almost maintain to 750 Gy. The LD_{50} in mice remained unchanged for doses of 100 and 250 Gy, but increased more than 2,0 times at doses above 1000 Gy. These results suggest a high resistance of the Crotalus durissus terrificus venom to gamma radiation in spite of the fact that the biological activity was changed in the higher doses.