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COLEÇÃO PTC
DEVOLVER AO BALCAO DE EMPRÉSTIMO

ajudar a explicar a melhor imunogenicidade de proteínas irradiadas.
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BIOCHEMICAL AND IMMUNOLOGICAL CHARACTERIZATION OF THE MAIN PRODUCTS OF CROTOXIN IRRADIATION. Nascimento, N.;
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Background and Objectives: Animals toxins are proteins with specific toxic actions that usually need antiserum treatment. The antisera are produced by animals that are also exposed to toxic actions, usually with losses. The gamma radiation affects proteins by its free radical production through water radiolysis or direct action. Irradiation of purified *Crotalus durissus terrificus* crotoxin and its subunits with 2000 Gy of γ rays from ⁶⁰Co source leads to aggregation and lower molecular weight by-products, without affecting its immunogenicity and improving antiserum production. In order to explain those facts, we characterized biochemically and immunologically the main products of crotoxin irradiation.

Methods: Crotoxin were purified from dry venom from *Crotalus durissus terrificus* (I. Butantan) by gel filtration and FPLC, freeze dried and irradiated with 2000 Gy of γ rays from ⁶⁰Co in a GammaCell 220, at room temperature and atmosphere. After irradiation, the main products were separated in three fractions, according its molecular weight in gel filtration, as aggregates (high molecular weight) non-aggregated irradiated crotoxin (NIAC) and breakdown low molecular weight products. Antigenicity were determined by ELISA assays using microplates coated with monoclonal antibodies directed against main epitopes of crotoxin, kindly furnished by I.I. Kaiser (Univ. Wyoming). Toxicity was determined in mice.

Results and Conclusions: Aggregates retains at least part of their higher-ordered structure, based on their reactivity with mabs against native crotoxin. These same aggregates can serve as antigens to raise antiserum that cross-reacts and neutralizes crotoxin. Compared to native crotoxin, aggregates are devoid of myotoxic and phospholipase A₂ activity, and virtually non-toxic to mice. NIAC retains most of the toxic properties of crotoxin. These results indicate that irradiation of toxic proteins can promote significant detoxification with most of the original antigenic and immunologic properties of the native protein.

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