BQ15 – EFFECTS OF ^{60}CO RADIATION ON THE MOLECULAR STRUCURE OF CROTAMINE

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Crotamine is a 4882 dalton basic polypeptide with myotoxic activity. This toxin induces skeletal muscle spasms leading to spastic paralysis of the hind limbs in mice. Ionizing radiation has been successfully employed to attenuate toxins, preserving their immunogenic properties. The molecular alterations suffered by irradiated biomolecules are not yet fully characterized and much work remains to be done within this field. In the present work, we used crotamine as a model to investigate the effects of gamma radiation on the structure of polypeptides. Toxin samples were irradiated with 400, 2000 or 10000 Gy, at a 5.17 kGy/h dose rate in a gammacell ^{60}Co source. After irradiation, the samples were analyzed on a Micromass Q-TOF mass spectrometer in positive mode. Also, the changes in intrinsic fluorescence were investigated by solvent mediated quenching and UV spectra were performed. Our results indicate that with 2000 and 10000 Gy, the mass envelopes became more complex, suggesting oxygen adduct formation. With 2000 Gy dose, an envelope corresponding to a crotamine dimer was detected, while with the 10000 Gy sample, a trimeric molecule was observed. The fluorescence data showed a dose-dependent decrease in emission, indicating gradual exposure of the tryptophans to the solvent. The UV spectra indicate changes in the chromophore exposure. These data suggest that irradiation leads to progressive changes in the primary and tertiary structure of the toxin, which could explain the lower toxicity observed.

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BQ16 – INVESTIGATION OF THE PARTIAL COMPOSITION OF *ACHATINA FULICA* SNAIL MUCUS AND ITS EFFECTS ON SURGICAL INJURIES IN RABBITS

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The aim of this study was to investigate the partial composition of *A. fulica* snail mucus in order to evaluate and compare micro and macroscopic effects in rabbit incisions (n=5), using mucus alone or incorporated in several types of ointments. A control group was also included. The crude mucus was obtained by manual stimulus, and its compounds were examined by spectrophotometry, showing 79% of proteins, 4% of carbohydrates and 7% of lipids. The microscopic characteristics of the injuries were registered and a biopsy for histological analysis was done 72 hours after the treatment. Fragments were fixed in Bouin, processed afterwards and then included in paraffin. The cuts were dyed with Trichromo-mason. In both cases, after 72 hours of the surgical intervention, the epidermis of the tested rabbits showed a basal layer of cubic cells, whereas the control group showed a basal layer of cells with disorganized areas. The macroscopic evolution of the cicatrization process occurred in a shorter period of time in the treated rabbits in relation to the control ones.

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