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## Induction of radiodermatitis and treatment with topical formulation with solid lipid nanoparticles containing curcuminoids NLS-CT: Preliminary data from preclinical study

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The objective of this study was to verify the effect of topical formulations containing solid lipid nanoparticles in the treatment of induced radiodermatitis in mice. Fifteen male mice (7 to 8, weighing 20-25 grams), BALB lineage, irradiated with 30 Gy, single dose, in the left hind paw, 80 kVp energy, 20 mA current, open field with diaphragm 10x10 cm and collimated with a 1.5x1.5 cm lead plate, at a source distance of 35 cm were given. They were divided into five groups of three, three groups being treated daily with SLN-CT-based gel (Experimental group-1 with 5 mg; Experimental group-2 with 17.5 mg and Experimental group-3 with 30 mg), one with gel with SLN without curcuminoids (positive control) and another that received no treatment (negative control). In day 7, irradiated areas were biopsied and histologically analyzed. In the control groups, a thinner epidermis was observed, with a thicker corneous layer, viable cells, with well delimited nuclei, but with an extra-cellular matrix-less organized MEC and less delimited dermo-epidermal junction; With better appearance in the positive control. In the experimental groups a more cellular epidermis was observed, more dense and organized MEC, rich in annexes, more fibroblasts and inflammatory infiltrates than controls, being the Experimental group 3 was the one that stood out the most. However, this infiltrate does not characterize an inflammatory process. NLS-CT can contribute to the tissue repair process after ionizing radiation, given the anti-inflammatory and atioxidant activity of curcuminoids.

### Biography

Cristina Mara Zamarioli has completed her undergraduation course and Master's degree from the University of São Paulo at Ribeirão Preto College of Nursing and specialization in Clinical Oncology from the National Cancer Institute. She is a PhD student, and has interest in nursing Cancer and Nanotechnology studies

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