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BONE REPAIR WITH RALOXIFENE AND BIOGLASS NANOCERAMIC COMPOSITE IN ANIMAL EXPERIMENT

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This study proposes to evaluate, by means of microtomographic analysis, the topical potential of raloxifene combined with BioGran® through the sonochemical method in the repair of critical bone defects in the calvaria of rats. The hypothesis was that the homogenization of Raloxifene to Biogran at the 20% concentration would improve the bone repair at the grafted site. A 5-mm calvaria bone defect was induced in three groups: CTR (100% BioGran®); RAL10 (90% BioGran® and 10% raloxifene), and RAL20 (80% BioGran® and 20% raloxifene). The animals were euthanized after 30 days and the microCT analysis was then performed to evaluate the parameters bone volume (BV), bone volume percentage (BV/TV), trabecular bone thickness (Tb.Th), and the separation and number of trabeculae (Tb.Sp and Tb.N). The obtained results were compared using ANOVA and Tukey test ($p < 0.05$). The best results were found for the CTR and RAL20 groups, in which the BV, BV/TV, Tb.Sp, and Tb.N parameters were statistically significant in comparison with RAL10 ($p < 0.05$). In view of the results obtained in this experiment, we can conclude that BioGran® alone or in an 80/20 mass concentration with raloxifene can lead to favorable bone formation.