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HISTOCHEMICAL OBSERVATION AND THE ANALYSIS OF BIOCHEMICAL BONE REGENERATION MARKERS IN TREATMENT OF AN OSTEOPOROTIC RAT BONE WITH Ca/Co-HAp NANOPARTICLES

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One of the prerequisites for a good prosthetic rehabilitation is well preserved bone tissue. However, osteoporosis as a modern age disease often compromises a good dental treatment. Oral implantology offers a solution through the use of various biomaterials. Most researchers focus on the synthesis of the nanomaterials with magnetic and paramagnetic properties. The aim of this study is to examine the role of Ca / Co-HAp nanoparticles in the regeneration of the osteoporotic alveolar bone in experimental animals by analyzing the biochemical blood markers (ALP, Ca, Mg, and P) and through histochemical analysis. The research was carried out on female Westar rats, aged 6-8 weeks. The obtained results for the biochemical blood markers showed statistically significant rise. Histological analysis revealed high level reparatory skills of the biocomposite implanted in the bone defect as early as in the 6th week of the experiment as well as an increased alkaline phosphatase activity in the mineralized tissues. The implantation of the biomaterials facilitates osteogenesis, justifying their use in the accelerated regeneration treatment of the osteoporotic alveolar bone.