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**TREATMENT OF OSTEOPOROSIS ALVEOLAR BONE WITH COBALT
SUBSTITUTED HYDROXYAPATITE NANOPARTICLES**

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In this study nanocomposite was used for reconstruction of alveolar bone defect of mandible. Specifically, the main interest for the use of magnetic nanoparticles in biomedical applications is that an inhomogeneous external magnetic field exerts a force on them, and thus they can be manipulated or transported to a specific diseased tissue by a magnetic field gradient. In addition, magnetic particles are of interest because they do not retain any magnetism after removal of the magnetic field. Specifically, inorganic biodegradable nanoparticles (including ceramics, like hydroxyapatite) will be functionalized with bioactive compounds that bond to bone of low mass. Extremely good results in the recovery of alveolar bone osteoporosis were achieved already after 6th week of the application of magnetic nanoparticles. After bonding specifically to osteoporotic bone and not healthy bone, magnetic nanoparticle systems will deliver bioactive compounds to locally increase bone mass. Implantation of magnetic nanoparticles will create bone construction and enable quick formation of new bone and become the material of choice for accelerated bone regeneration.