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Programme
and
The Book of Abstracts

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APPLICATION ANALYSIS OF MICRO AND NANO COMPOSITES IN RESTORING OF BONE TISSUE OF THE JAW

Z. Ajduković[1], N. Ignjatović[2], D. Petrović[3], V. Savić[4], B. Kaličanin[5], M. Kostić[6], M. Andjelković[6], S. Nikolov[4]

[1]University of Niš, Faculty of Medicine, Clinic of Stomatology, Department of Prosthodontics, Niš, Serbia, [2] Institute of Technical Sciences of SASA, Belgrade, Serbia, [3]University of Niš, Faculty of Medicine, Clinic of Stomatology, Department of Maxillofacial Surgery, Niš, Serbia, [4]University of Niš, Faculty of Medicine, Institute of Biochemical Research, Niš, Serbia, [5]University of Niš, Faculty of Medicine, Department of Pharmacy, Niš, Serbia, [6]Clinic of Stomatology, Department of Prosthodontics, Niš, Serbia

Application of synthetic polymer biomaterials is very often used in biomedicine and dentistry. That's why the need for creating the new polymer biomaterials is more and more obvious. Hydroxy-apatite, as a natural constituent of bone, has been already used for many years in all segments of dentistry. In order to develop better properties, hydroxy-apatite is combined with polymers. In this research, application of micro and nano composite biomaterials in reconstruction of osteoporosis damaged alveolar bone of rats is analyzed. Evaluation of regeneration of restored osteoporosis damaged alveolar bone of rats was done by histopathological analyses. The optimal results were after 24 weeks after implantation of calcium-phosphate/poly-D, L-lactide-co-glycolide (CP/DLPLG) composite biomaterials nano particles in comparison to micro particles. Regeneration and reparation of damaged alveolar bone with creation of new bone tissue which is very similar to mature bone, are much better on the place of nano CP/DLPLG implantation. Because of its very good osteoconductive effect, applied nano CP/DLPLG composite can totally renew lost bone tissue, so it can be the material of choice for the alveolar bone defect rehabilitation.