GMP FACILITIES FOR BIOREACTOR-BASED TISSUE ENGINEERING

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GMP facilities have been traditionally conceived for standard sterile pharmaceutical production, based on chemical compounds concepts.

Production for cell-based active ingredients need a significant reinvention, that bioreactors for Biocomet project realized improving stability of products together with high potential compliance to current pharma products standards.

FROM HYDROGELS TO REINFORCED COMPOSITE STRUCTURES AS A POTENTIAL BONE SUBSTITUENTS

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There have been numerous investigations based on the synthesis of new biodegradable scaffolds for bone tissue replacement. To achieve required features of potential biomaterial substituent, wide range of synthetic and natural polymers along with calcium phosphate phases were used. The main goal is to produce a material that can mimic extracellular matrix of natural bone. Chitosan has shown to be a good candidate for tissue engineering materials due to its chemical similarity to biological molecules and short-time biodegradability in vivo through specific enzymatic reactions. Likewise, chitosan can be processed by different techniques for scaffold production (lyophilization, electrospinning, thermally induced phase separation, particulate leaching, microsphere sintering, etc). Scaffold's topography (surface roughness), charge and wettability, microstructure and interconnected porosity