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Composite Scaffolds with Inclusion of Magnetite Nanoparticles for Bone Tissue Engineering

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More than 200 bones provide vital functions to the human body. The unique regenerative capacity of bone allows the healing without structural or functional impairment in case of minor defects, while in case of major defects, bone tissue engineering (based on a scaffold, cells and bioactive factors) can be seen as an alternative to the conventional methods. Composite scaffolds for bone tissue engineering based on biopolymers and ceramics, the main components of human bone, successfully combined the key properties of the two biomaterials, as is reported in the present paper. The inclusion of magnetite in the scaffolds brings also great advantages, and moreover, functionalized with drugs, will make possible its use as targeted drug delivery systems.