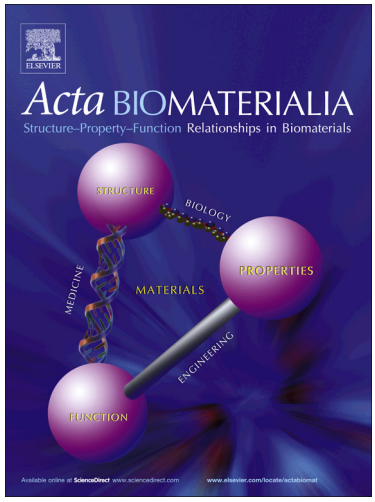

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An *in vivo* model to assess magnesium alloys and their biological effect on human bone marrow stromal cells

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Abstract

Magnesium (Mg) alloys have many unique qualities which make them ideal candidates for bone fixation devices, including biocompatibility and degradation *in vivo*. Despite a rise in Mg alloy production and research, there remains no standardized system to assess their degradation or biological effect on human stem cells *in vivo*. In this study, we developed a novel *in vivo* model to assess Mg alloys for craniofacial and orthopedic applications. Our model consists of a collagen sponge seeded with human bone marrow stromal cells (hBMSCs) around a central Mg alloy rod. These scaffolds were implanted subcutaneously in mice and analyzed after eight