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P.S.E.2.

**Development and characterization of Mg-containing hydroxyapatite,
 β -tricalcium phosphate and biphasic calcium phosphate bioceramics**

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Calcium phosphates (CaPs), e.g. hydroxyapatite, β -tricalcium phosphate due to their unique properties – bioactivity and/or biodegradability, osteoconductivity, are considered to be promising bone grafts. CaPs present themselves as prime materials for modification, aiming for improvements on physicochemical and biological aspects of novel graft. Nowadays interest is turning towards modified synthetic CaPs involving the addition of various elements. The goal of our work is to develop Mg-containing CaP bioceramics and to evaluate an effect of the Mg addition on physicochemical characterization in particle and bulk level, as well as assess a biological performance of the Mg-containing CaP bioceramics.

Results confirmed that CaP bioceramics with various and reproducible phase and chemical composition were obtained through the precipitation of precursors followed by uniaxial compaction and sintering (1100 °C, 1 h). The Mg-containing CaP bioceramics show advisable bioactivity with osteogenic progenitor cells and have good cytocompatibility, showing no negative effects on cells growth and proliferation.

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