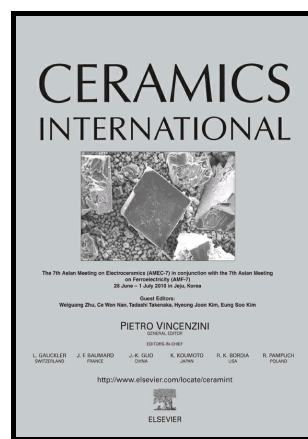


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Preparation and characterization of mesoporous bioactive glass from agricultural waste rice husk for targeted anticancer drug delivery

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Abstract

Mesoporous bioactive glass (MBG) possesses excellent biocompatibility and an important material used for bone regeneration and drug delivery. The aim of this study is to synthesize MBG from low-cost agricultural waste rice husk (rMBG) using a sol-gel process. We show that rMBG has typical characteristics of the well-ordered hexagonal mesostructure of MBG and can be grafted with folic acid (FA) and then loaded with anticancer drugs for targeting cancer cells. By loading rMBG-FA with camptothecin (CPT, a water-insoluble anticancer drug) we formed rMBG-FA/CPT, which killed cancer cells by being selectively and efficiently taken in via the cells' FA receptors (FRs). We found that rMBG-FA/CPT showed a higher cytotoxicity to FR-

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