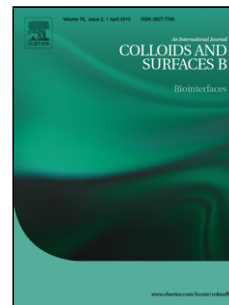


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Title: Universal and biocompatible hydroxyapatite coating induced by phytic acid-metal complex multilayer

Authors: Quanxin Wang, Chunmei Ding, Yiming Zhou, Jianbin lu, Jianshu Li



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Abstract: As the basic component of natural bone in human body, hydroxyapatite is widely used in orthopedic, dental and bone implants, especially as the surface coating to improve osteoconductivity and osseointegration of materials. Although several methods have been used for the coating of hydroxyapatite including plasma spraying, laser pulse deposition, electrophoretic and electrochemical deposition. The methods mentioned above have some disadvantages, such as expensive instruments and complex operations. Thus, it is highly demanded to develop a feasible, simple, cheap and universal way for the preparation of hydroxyapatite coating. Here in this work, we develop a method to realize hydroxyapatite coating on various materials by phytic acid-metal complex multilayer. The abundant phosphate moieties on phytic acid not only work for chemical modification of a wide range of materials but also for further formation of hydroxyapatite. The formed crystals improve the biocompatibility and osteogenic ability of MG63 cells. This strategy introduced here is simple, cheap and novel, which can be utilized in biomedical areas such as orthopedic, dental and bone implants materials.

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