***In Vitro* Bioactivity, Degradation Property and Cell Viability of the CaP/Chitosan/Graphene Coating on Magnesium Alloy in m-SBF**

Jie Zhang^{1,2*}, Fangfang Zhu¹, Yu Zhang¹, Ming Hu¹, Yanxia Chi¹, Xiangyu Zhang¹, Xiaoling Guo¹

¹ Pharmaceutical Research Institute in Heilongjiang Province, Jiamusi university, Jiamusi 154007, China

² Department of neuro intern, First Affiliated Hospital of Harbin Medical University, Harbin 150001, China

*E-mail: zjie612@163.com

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CaP/chitosan/graphene coating on Mg alloy was obtained by electrophoretic deposition (EPD) and transformation in a phosphate buffer solution (PBS). The microstructures and compositions of the composite coatings were studied by scanning electron microscope (SEM), Fourier-transformed infrared spectroscopy (FTIR), X-ray diffraction (XRD) and Raman spectroscopy. The element concentration was investigated by inductively coupled plasma optical emission spectrometer (ICP-OES) test. The degradation behavior of Mg based CaP/chitosan/graphene in m-SBF was researched by soaking experiment and electrochemical performance test. The cytotoxicity of the prepared material to SaOS-2 cells was determined by CCK assay. The results indicated that addition of graphene had a positive effect on improving the bioactivity and cell viability of the CaP/chitosan coating. CaP/chitosan/graphene coating could protect the Mg alloy from corroding in m-SBF.

Keywords: Graphene, Mg alloy, Bioactivity, Hydroxyapatite, Bone-like apatite

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