Short Communication

Electrochemical Deposition of Calcium Phosphate/Chitosan/Gentamicin on a Titanium Alloy for Bone Tissue Healing

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doi: 10.20964/2018.05.39

Received: 2 December 2017 / Accepted: 27 January 2018 / Published: 10 April 2018

In the present study, a calcium phosphate/chitosan/gentamicin (Ca-P/CS/gentamicin) film was deposited onto a titanium alloy surface through electrochemical deposition. High drug loading into the coating was described, along with a controlled release of the drug over two days. After the implantation of the developed film into rat calvarial defects, new woven bone was formed in the defects and mineralized at a high rate (62.5 mm/day) during the initial stages, which is much higher than that of normal bone growth rates (several mm/day, 0.1 mg/day).

Keywords: Calcium phosphate; Chitosan; Bone Healing; Electrodeposition; Gentamicin

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