

Accepted Manuscript

Title: Antibacterial and anti-biofouling coating on hydroxyapatite surface based on peptide-modified tannic acid

Authors: Xiao Yang, Pei Huang, Haihuan Wang, Shuang Cai, Yixue Liao, Ziqin Mo, Xinyuan Xu, Chunmei Ding, Changsheng Zhao, Jianshu Li



PII: S0927-7765(17)30588-X
DOI: <http://dx.doi.org/10.1016/j.colsurfb.2017.09.006>
Reference: COLSUB 8825

To appear in: *Colloids and Surfaces B: Biointerfaces*

Received date: 17-7-2017
Revised date: 31-8-2017
Accepted date: 5-9-2017

Please cite this article as: Xiao Yang, Pei Huang, Haihuan Wang, Shuang Cai, Yixue Liao, Ziqin Mo, Xinyuan Xu, Chunmei Ding, Changsheng Zhao, Jianshu Li, Antibacterial and anti-biofouling coating on hydroxyapatite surface based on peptide-modified tannic acid, *Colloids and Surfaces B: Biointerfaces* <http://dx.doi.org/10.1016/j.colsurfb.2017.09.006>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Received 00th January 20xx,

Accepted 00th January 20xx

Antibacterial and anti-biofouling coating on hydroxyapatite surface based on peptide-modified tannic acid

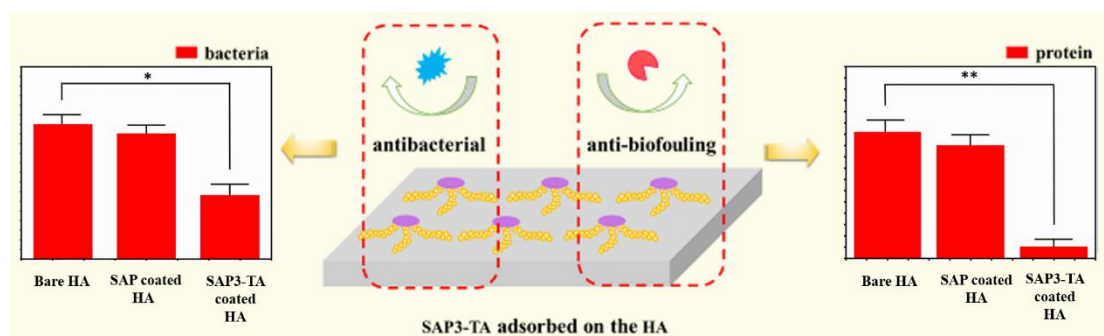
Xiao Yang[†], Pei Huang[†], Haihuan Wang[†], Shuang Cai, Yixue Liao, Ziqin Mo, Xinyuan Xu, Chunmei Ding, Changsheng Zhao, Jianshu Li*

^aCollege of Polymer Science and Engineering, State Key Laboratory of Polymer Materials Engineering, Sichuan University, Yi Huan Road, South Section One, No. 24, Chengdu 610065, China. E-mail: jianshu_li@scu.edu.cn; Fax: +86-28-85405402.

[†] These authors contributed equally to this work.

Graphical Abstract

A bio-inspired peptide-modified tannic acid exhibits specific adsorption on hydroxyapatite and antibacterial / anti-biofouling properties.



Highlights

- DDDEEKC modified tannic acid can effectively coat on hydroxyapatite (HA) surface.
- SAP3-TA coated HA surface can reduce current implant infection problem.
- Super-hydrophilic is the antibacterial and anti-biofouling mechanism of SAP3-TA.

Hydroxyapatite-based implant is widely used in the fields of artificial teeth and bones. However, the problem of microbial communities on hydroxyapatite surfaces remain a great challenge. In order to inhibit bacterial adhesion and activity in a long term, a salivary acquired pellicle (SAP) bioinspired tannic acid (SAP3-TA) is synthesized and characterized. The SAP inspired peptide sequence DDDEEK has a good adsorption performance on the surface of hydroxyapatite (HA). Tannic acid (TA) is a natural polyphenolic compound that can be extracted from green tea, and it has been proved to have an effective antibacterial property. After the coating of SAP3-TA on HA slices, the water contact angle is decreased to 14.2° and the HA surface becomes super-

Download English Version:

<https://daneshyari.com/en/article/6980732>

Download Persian Version:

<https://daneshyari.com/article/6980732>

[Daneshyari.com](https://daneshyari.com)