Bioinspired and Biomimetic AgNPs/gentamicin-embedded Silk Fibroin Coatings for Robust Antibacterial and Osteogenetic Applications

Wenhao Zhou[a], Zhaojun Jia[a], Pan Xiong[a], Jianglong Yan[a], Yangyang Li[a], Ming Li[c], Yan Cheng[a,*], Yufeng Zheng[a,b]

[a]*Academy for Advanced Interdisciplinary Studies, Peking University, Beijing 100871, China*

[b]*Department of Advanced Materials and Nanotechnology, College of Engineering, Peking University, Beijing 100871, China*

[c]*China-America Institute of Neuroscience, Xuanwu Hospital, Capital Medical University, Beijing, 100053, China*

***Corresponding author**

Y. Cheng, Ph. D.

Academy for Advanced Interdisciplinary Studies,

Peking University, Beijing 100871, China

Tel&Fax: 0086-10-6275 3404

E-mail: chengyan@pku.edu.cn

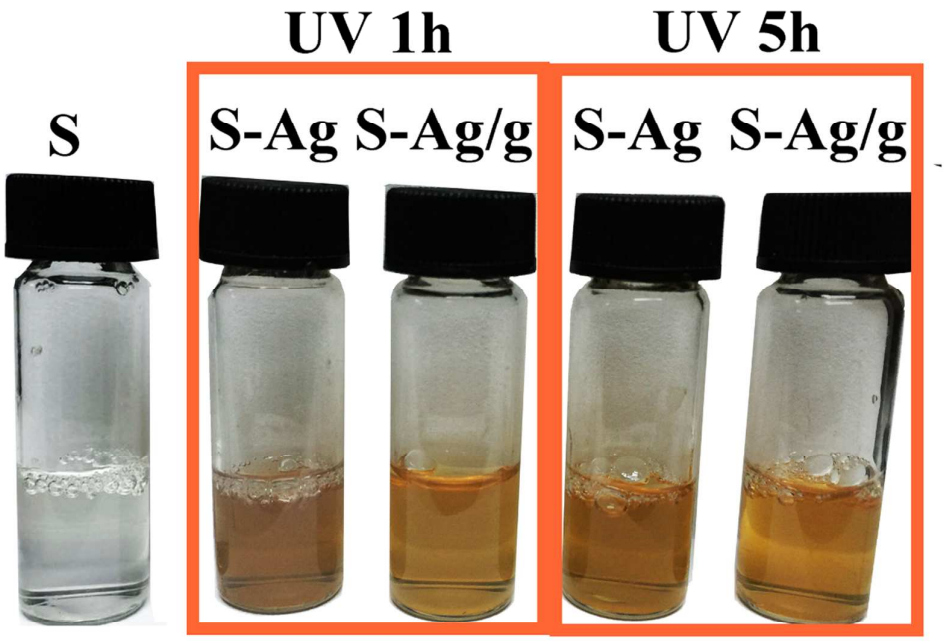

Fig. S1. Color change of different composite solutions under UV irradiation.

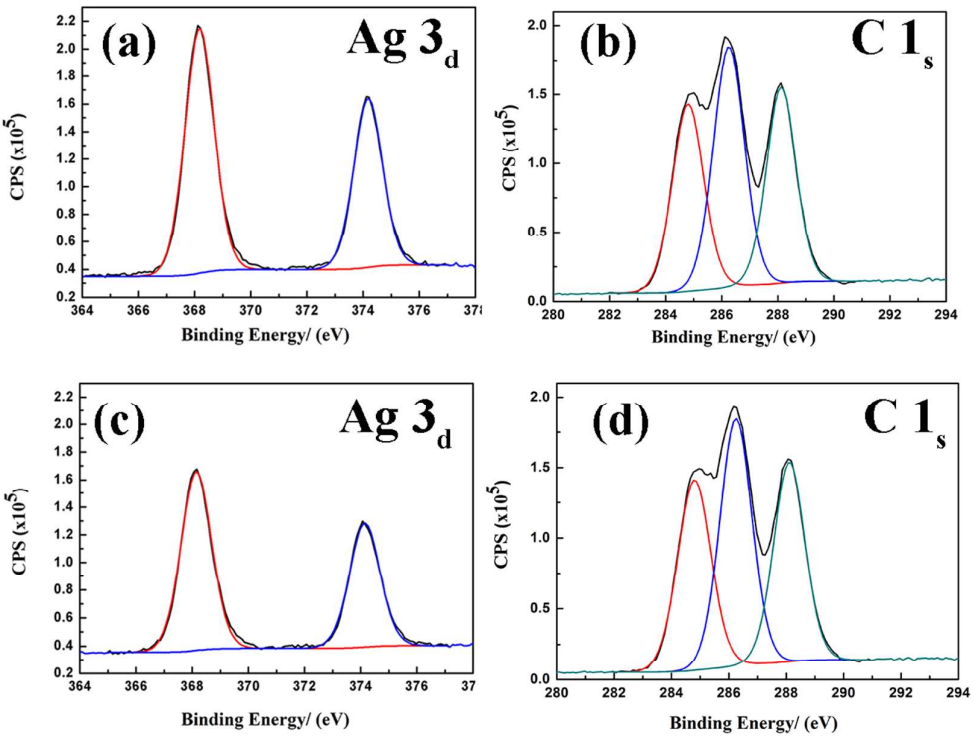

Fig. S2. Corresponding core-level spectra for Ag 3d and C 1 s of Ti-PD-S-Ag (a, c) and Ti-PD-S-Ag/g (b, d).

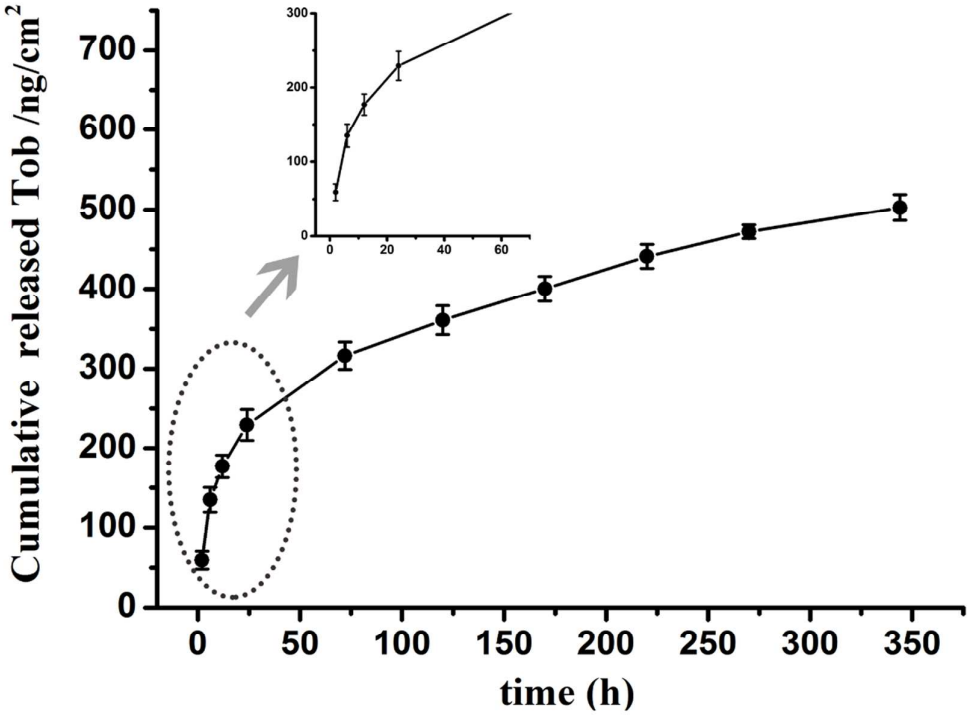

Fig. S3. The release behavior of Gen in PBS.

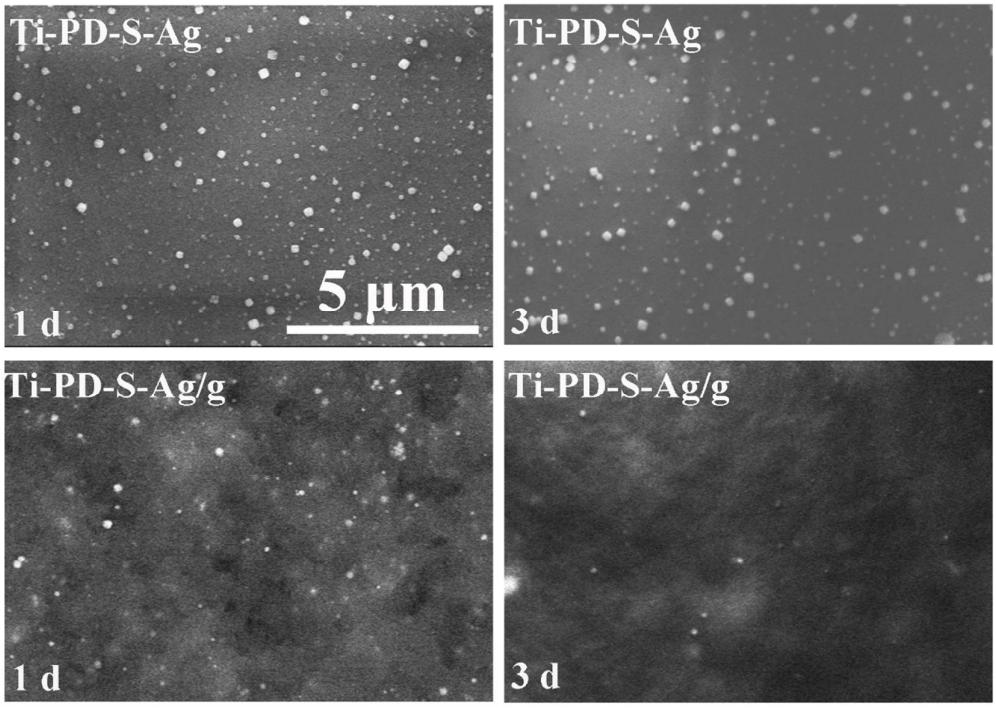

Fig. S4. SEM images of samples immersed for 1, 3 and 30 d respectively.

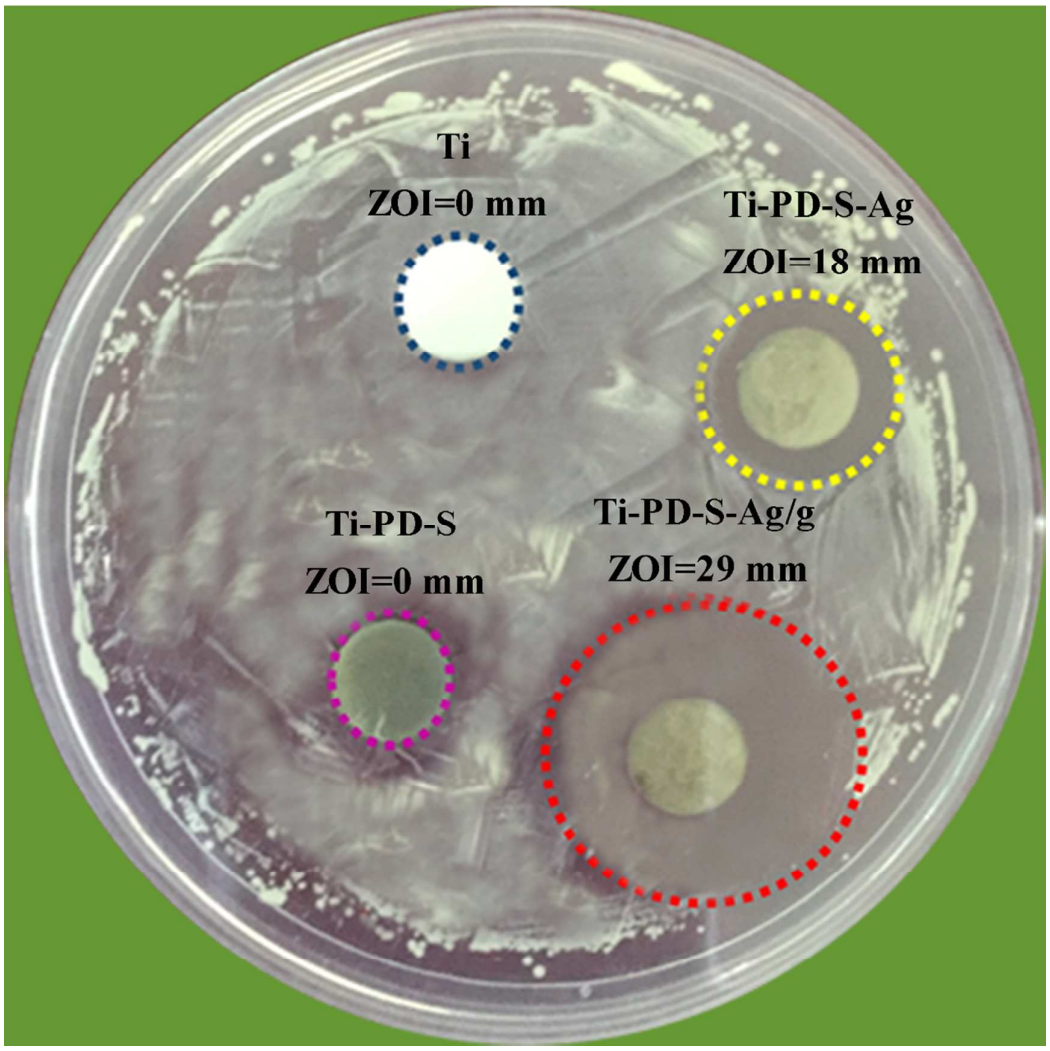

Fig. S5. Inhibitory zones for the samples against *S. aureus*.

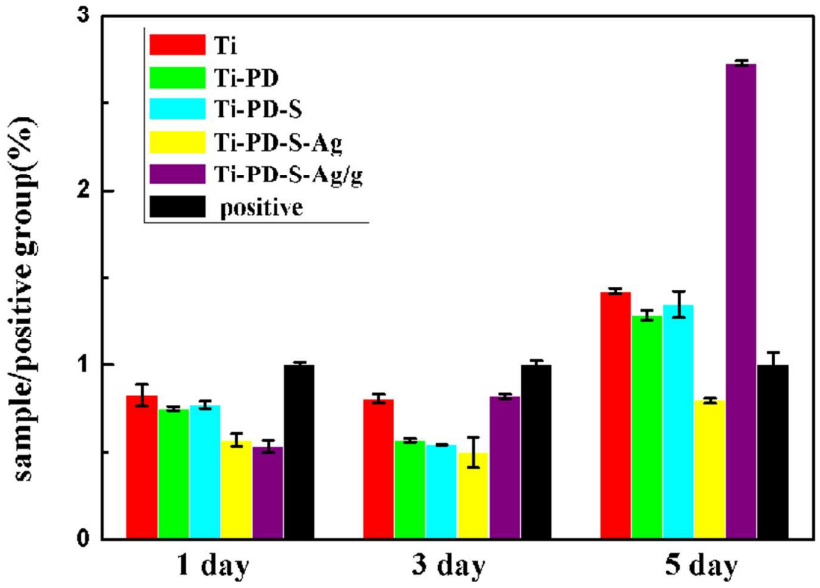

Fig. S6. Cell viability of MCT3T co-cultured with S. aureus (1×10^5 CFU/mL) on various surfaces for 1 d, 3 d and 5 d.

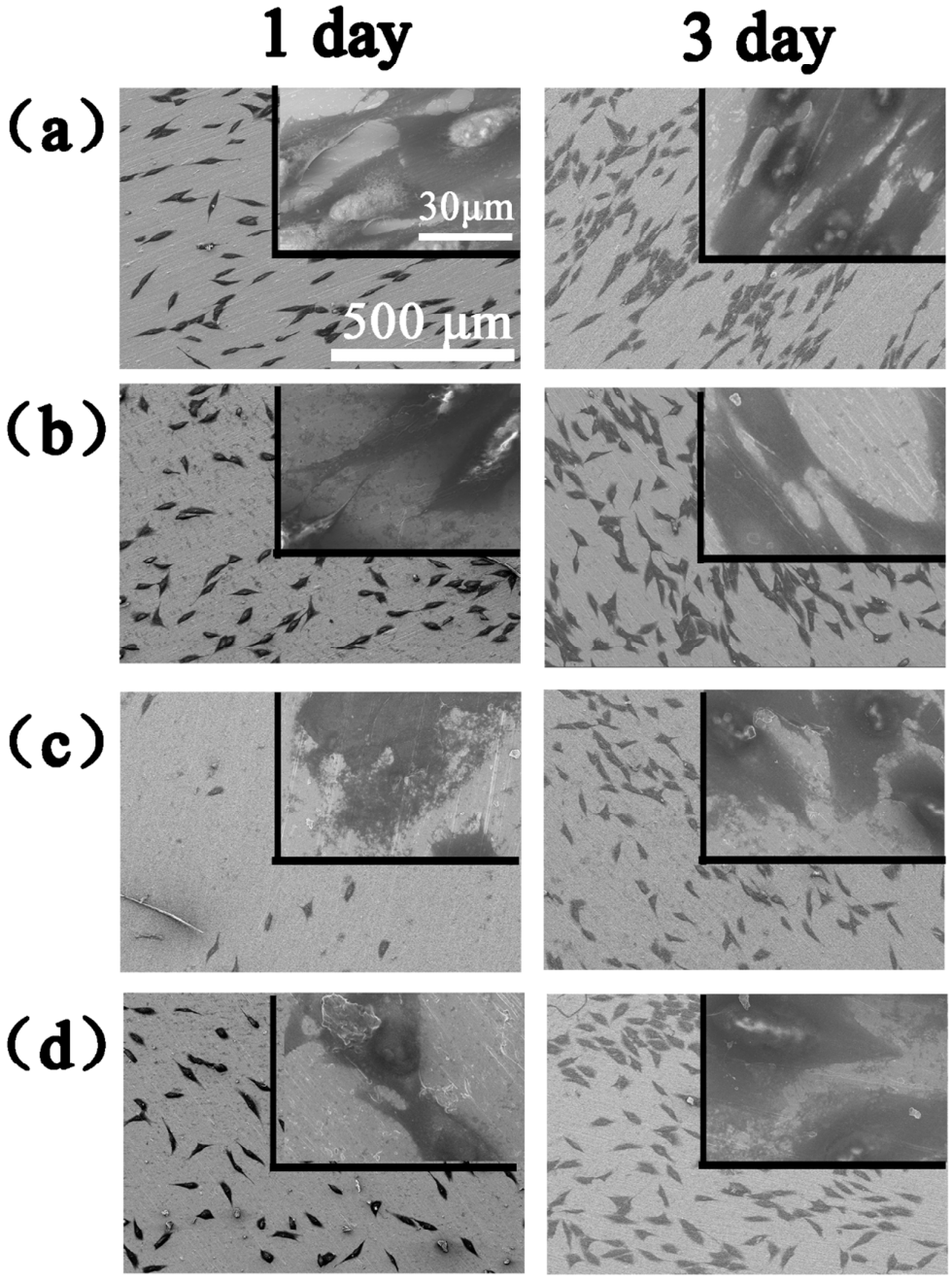

Fig. S7. The interfacial interplay between MC3T3 cells and (a) Ti, (b) Ti-PD-S, (c) Ti-PD-S-Ag and (d) Ti-PD-S-Ag/g.