

Electronic Supplementary Information for
Antimicrobial and Osteogenic Properties of Iron-doped Titanium

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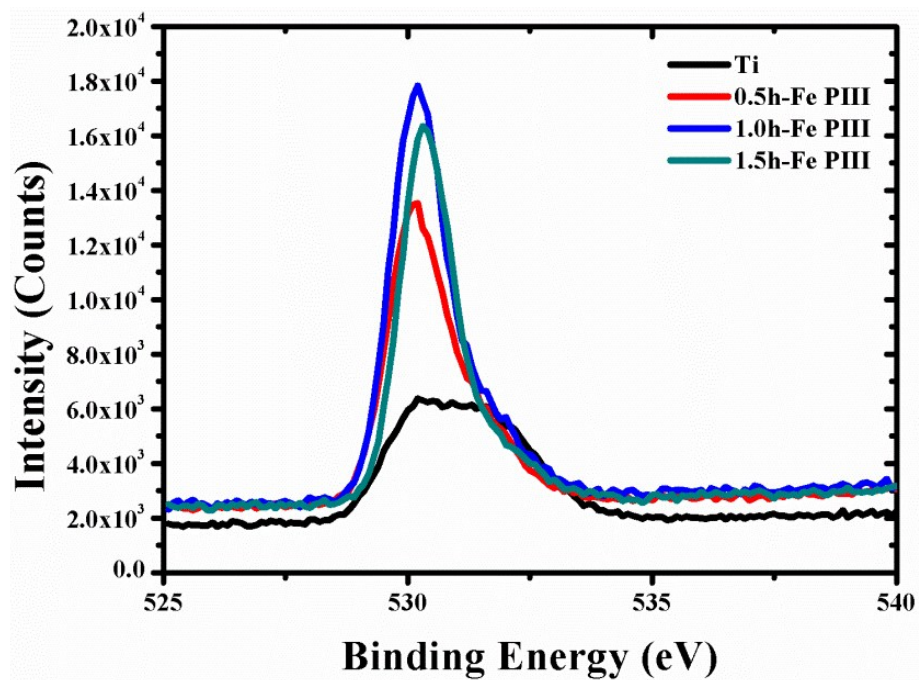


Fig. S1. O1s high-resolution XPS spectra obtained from apparent surfaces of the samples

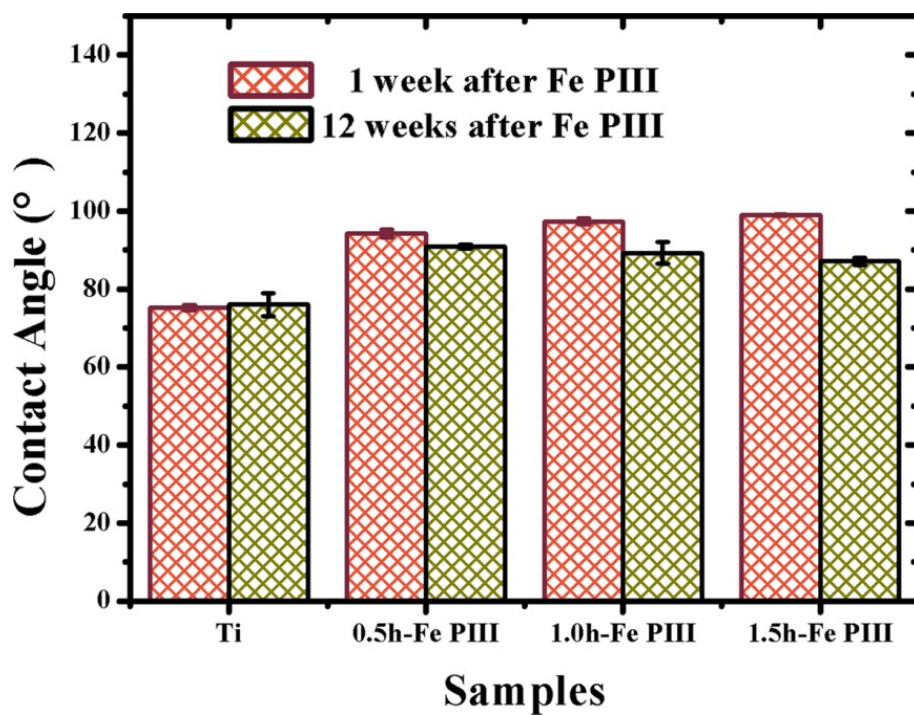


Fig. S2. Contact angle of Ti and Fe PIII treated samples

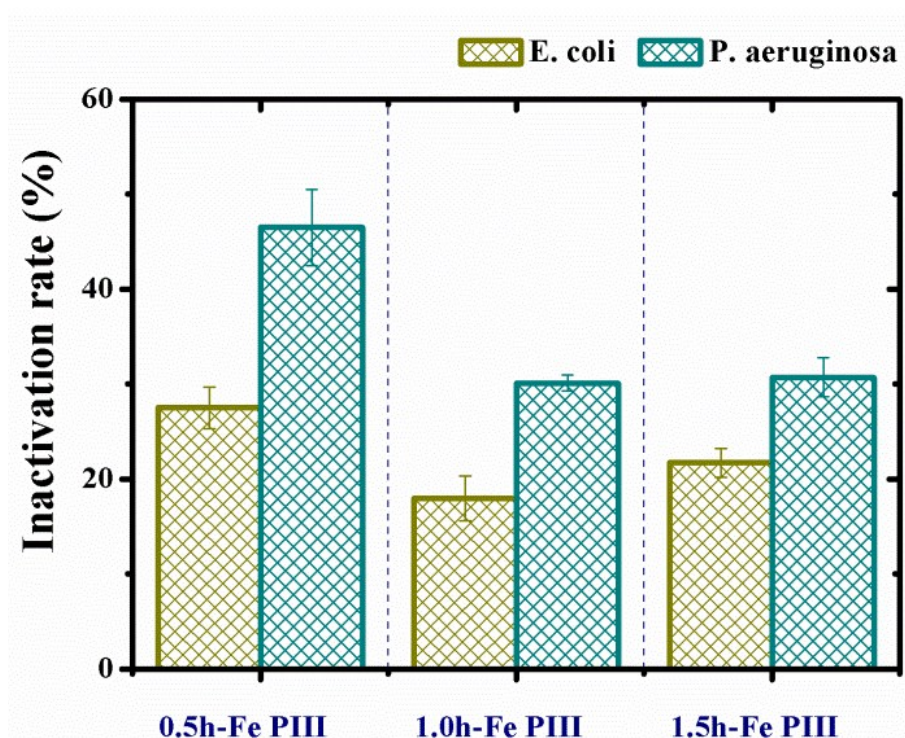


Fig. S3. Reduction percentage of each bacteria strain cultured on Fe PIII treated samples calculated from AlarmaBlue assay

Experiments

Antibacterial effect towards *Staphylococcus aureus* ATCC 25923 (*S. aureus*) was explored with respect to bacterial morphology, bacterial colony and live/dead viability test. The experiment procedures were same to the description in the manuscript, only that here *S. aureus* was cultured in tryptic soy broth or tryptic soy agar plates instead of Luria–Bertani (LB) broth or LB agar plates.

Result

As shown in Fig. S4(a), the cell membranes of *S. aureus* on the Ti sample were intact without apparent damage, and most of the bacteria cells on the Fe PIII treated samples remained intact. The photos of re-cultivated bacterial colonies on agar plates showed in Fig. S4(b) also confirmed that *S. aureus* strain cultured on Fe PIII treated samples was not suppressed. The microscopic images of *BacLight* DNA stain as shown in Fig. S4(c) revealed that the mortality rates of *S. aureus* strain seeded on Fe PIII treated samples were rather low. These results showed that, the Fe PIII treated samples didn't show bactericidal effect towards *S. aureus*, just like in the case of *E. coli* strain.

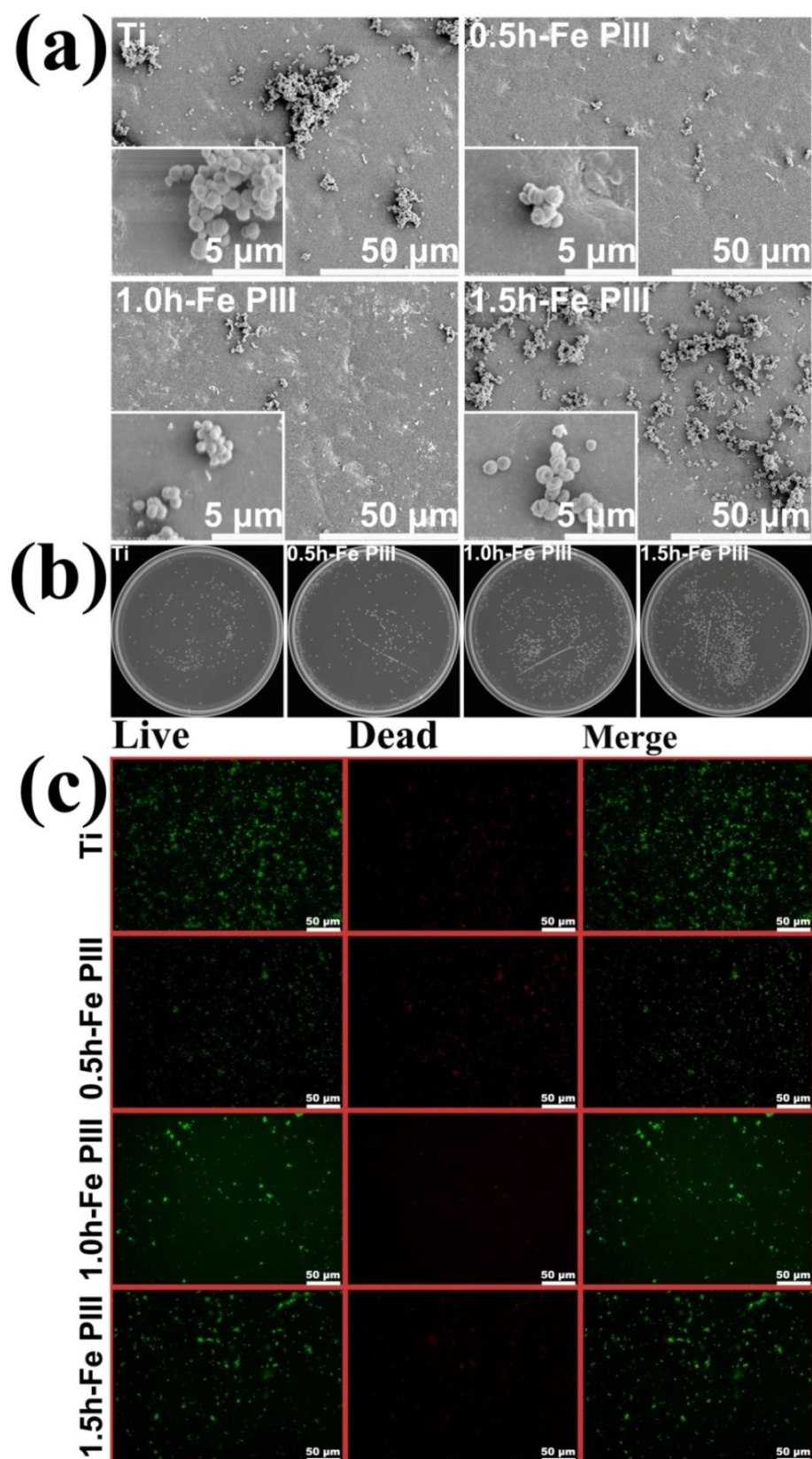


Fig. S4. SEM observation (a), photos of re-cultivated bacterial colonies on agar plates (b) and microscopic images of *BacLight* Live/Dead staining (c) of the *S. aureus* cells seeded onto various samples.