Electronic Supplementary Material (ESI) for Biomaterials Science.

Supplementary Information

Self-activating electron transfer antibacterial strategy: Co_3O_4/TiO_2 P-N heterojunction combined with photothermal therapy

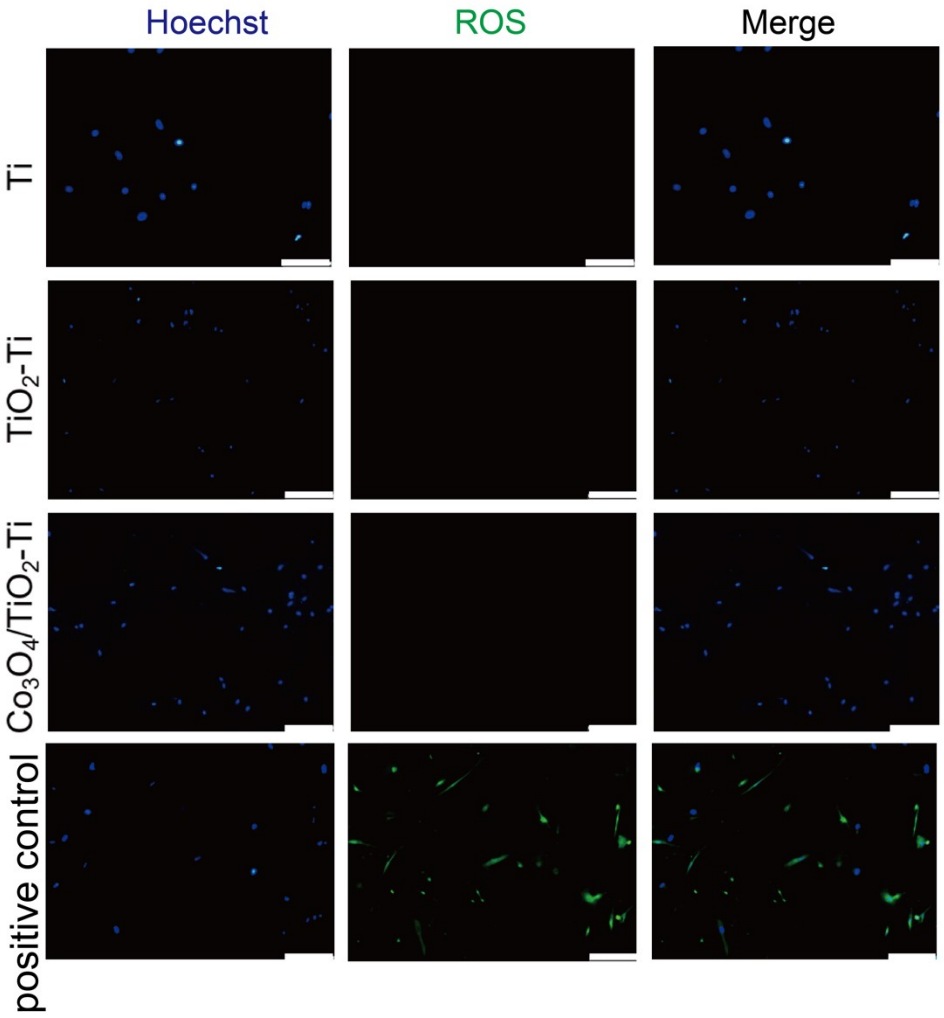

Figure S1. Cellular ROS production induced by the samples. Scale bar = 100 μm.

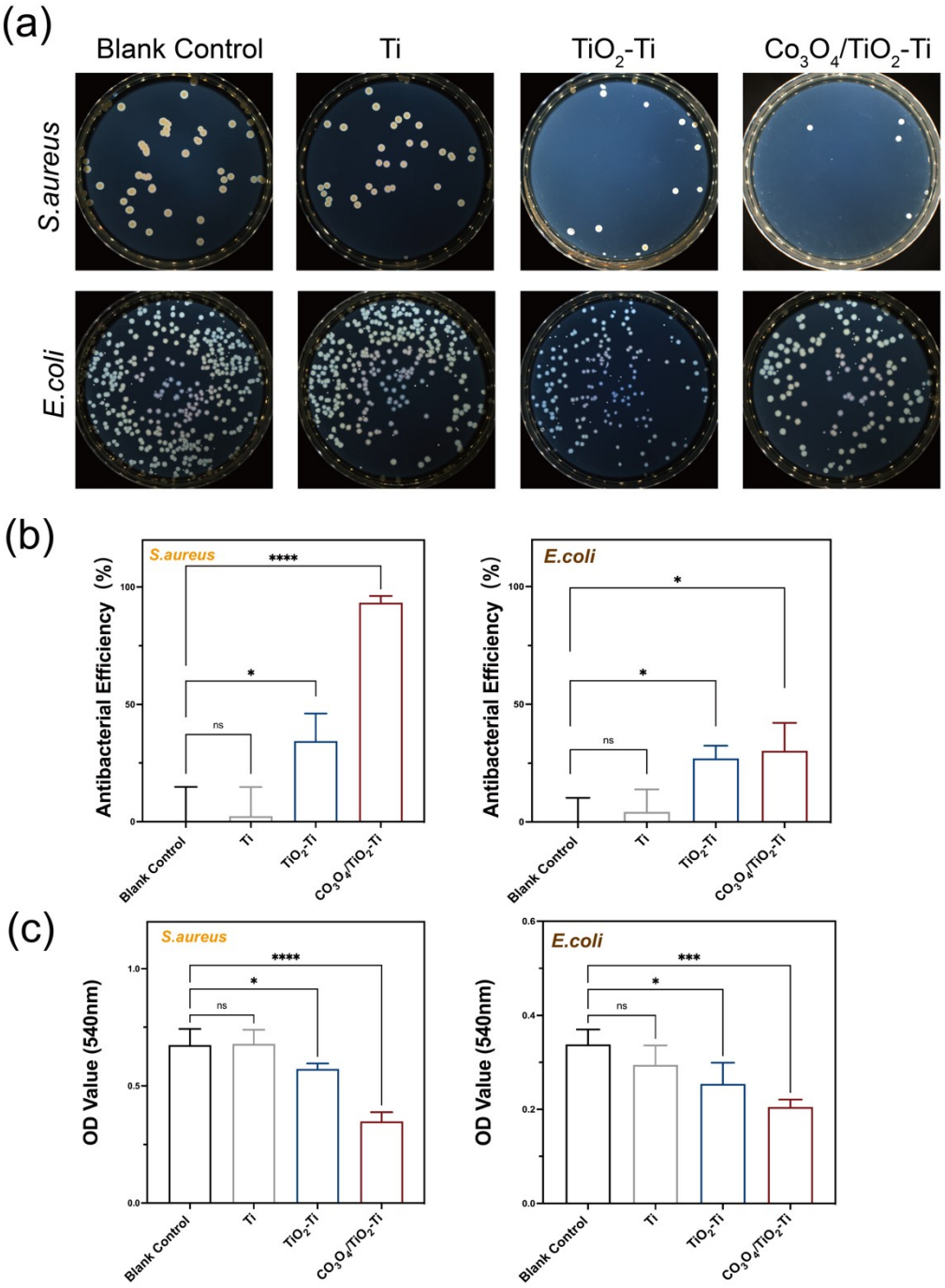

Figure S2. a) Representative images of adhesive *S. aureus* and *E. coli* bacterial colonies following 6-hour cultivation with a blank control, Ti, TiO_2-Ti, and Co_3O_4/TiO_2-Ti. b) Antibacterial efficacy of the samples after 6 h incubation. c) Bacterial viability when cultured on the samples for 6 h. Error bars represent SD (n = 3). *$p < 0.05$, ***$p < 0.001$, ****$p < 0.0001$, *ns*: no statistical significance.

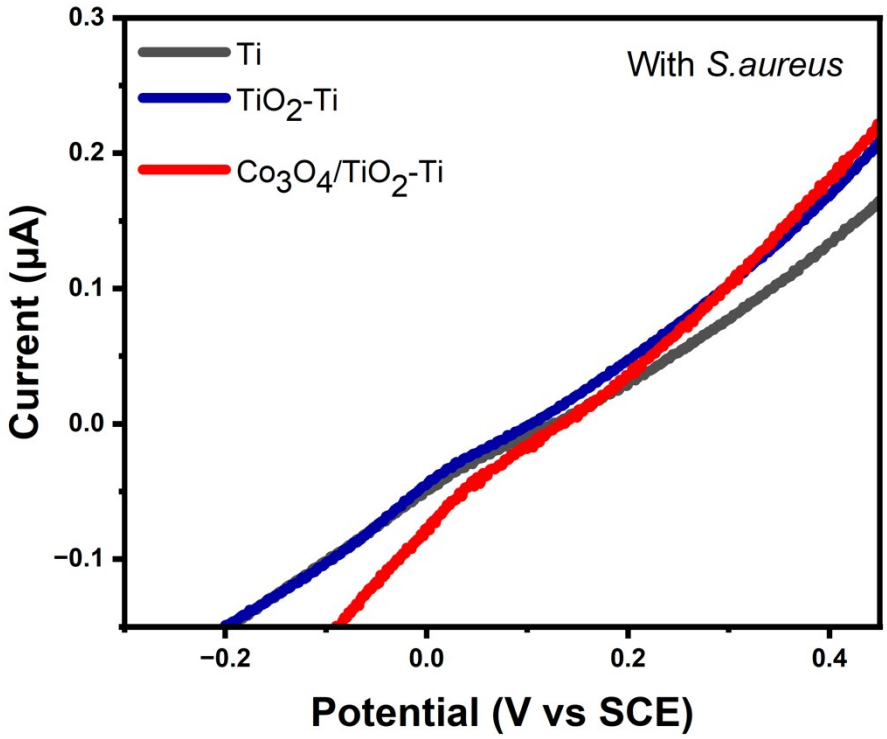

Figure S3. Comparative plot of current curves generated by different samples without *S. aureus*.

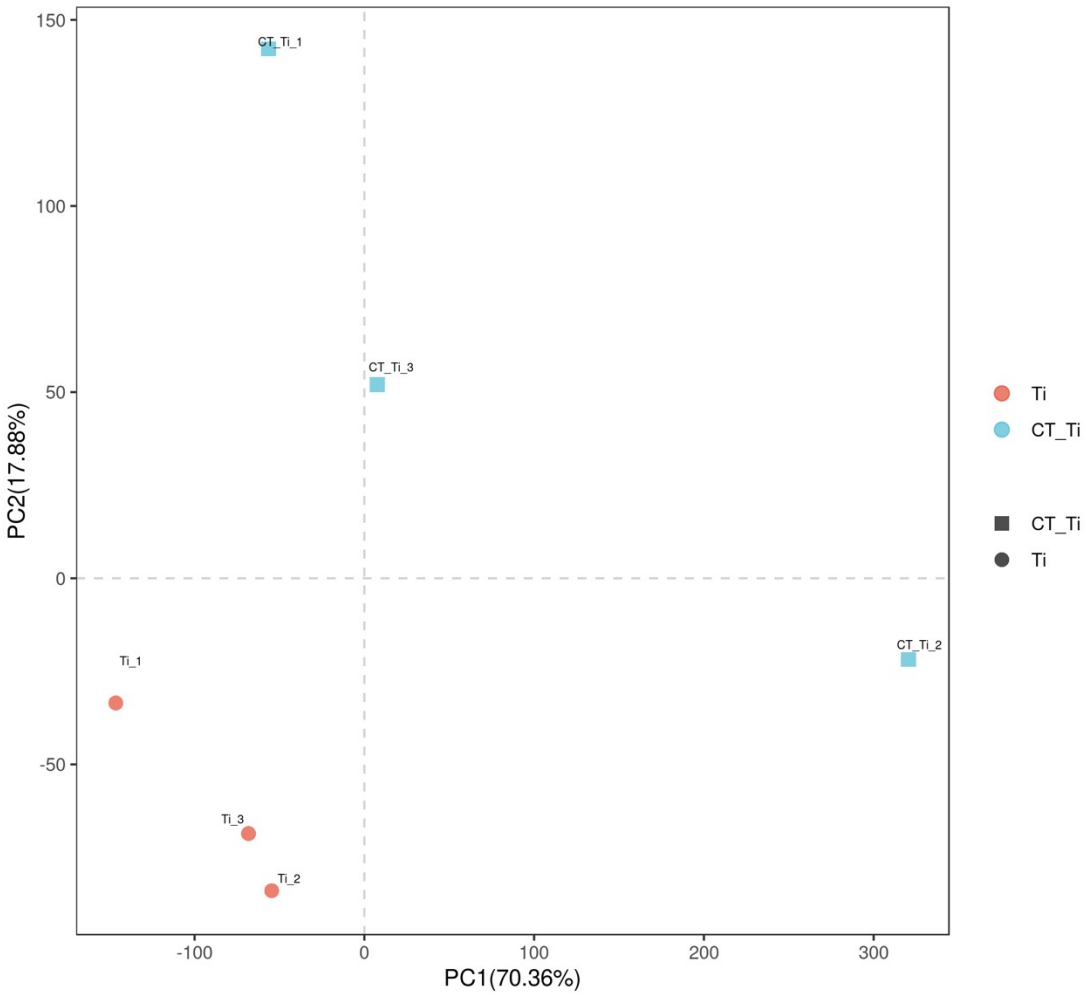

Figure S4. PCA (principal component analysis) plot for Ti and Co_3O_4/TiO_2-Ti. PCA plot shows PC1 and PC2 for all RNA-seq data of Ti and Co_3O_4/TiO_2-Ti.

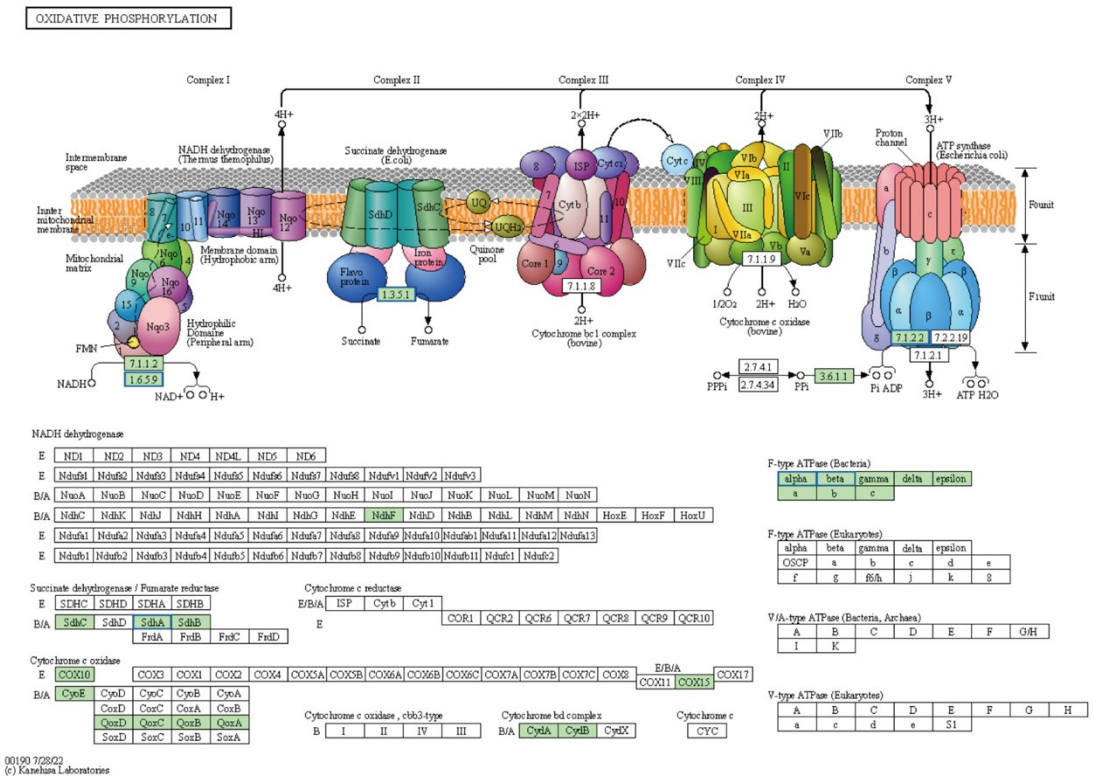

Figure S5. KEGG pathway data (OXIDATIVE PHOSPHORYLATION 1.6.5.9) of Ti, and Co_3O_4/TiO_2-Ti.

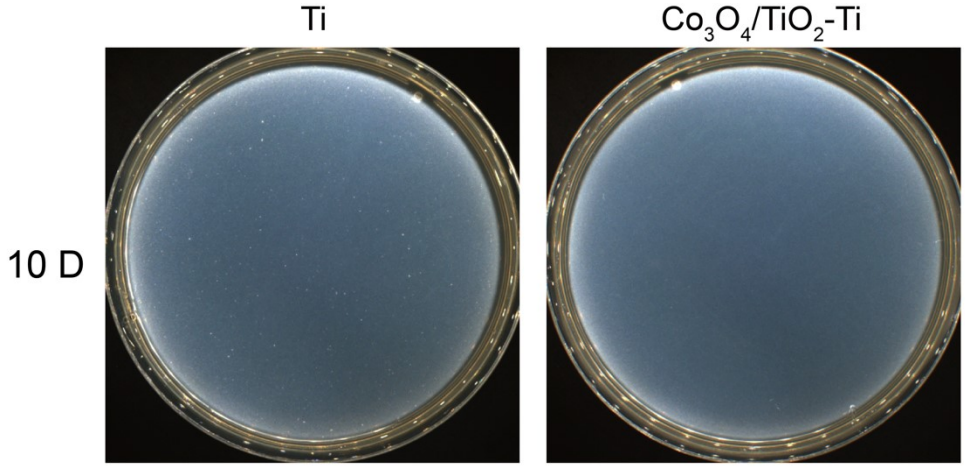

Figure S6. Representative images of *S. aureus* colonies after cultivation with Ti and Co_3O_4/TiO_2-Ti and their antibacterial efficiency for 10 days.

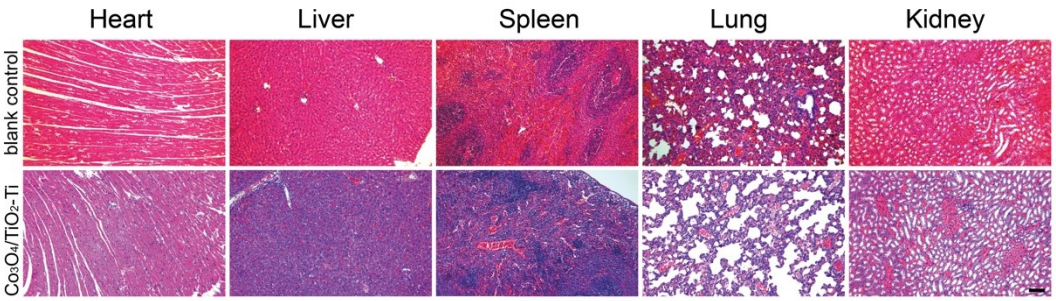

Figure S7. Biological assessment of heart, liver, spleen, lung, and kidney (n = 3). Scale bar: 100μm.