## Riboflavin-protected ultrasmall silver nanoclusters with

## enhanced antibacterial activity and the mechanisms

Xizhe Li, Tao Fu, Bingyu Li, Peng Yan, Yayan Wu\*

Key Laboratory of Biomedical Information Engineering of Ministry of Education, School of Life Science and Technology, Xi'an Jiaotong University, 710049, Xi'an, PR China



Fig S1 Characterization of RF@AgNCs: Size distribution histograms of RF@AgNCs.



Fig. S2 Characterization of AgNPs: (a) UV-is absorption of AgNPs. (b) Size distribution

histograms of AgNPs.



Fig. S3 Representative fluorescence microscopy images of the *E. Coli* cultured with RF@AgNCs conjugates and control groups for 2 h. Scale bar is at 25 µm.



Fig. S4 Representative fluorescence microscopy images of the *C. albicans* cultured with RF@AgNCs conjugates and control groups for 2 h. Scale bar is at 25  $\mu$ m.





(b) *E. coli* 



(c) C. albicans



Fig. S5 TEM images of S. aureus, E. coli, and C. albicans treated with RF@AgNCs for 2 h.



Fig. S6 Fluorescence microscopic images of intracellular ROS level after *E. coli* cells incubation with RF@AgNCs and control groups for 2 hours respectively and followed by staining with DCFH-DA fluorescent probe. Scale bar is at 25  $\mu$ m.



Fig. S7 Fluorescence microscopic images of intracellular ROS level after *C. albicans* cells incubation with RF@AgNCs and control groups for 2 hours respectively and followed by staining

with DCFH-DA fluorescent probe. Scale bar is at 25  $\mu m.$