Supporting Information

Visualization of Antimicrobial-Induced Bacterial Membrane Disruption with a Bicolor AIEgen

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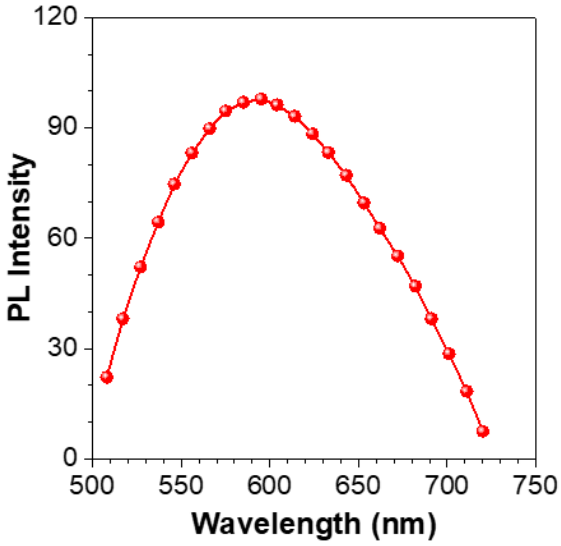

Figure S1. In situ fluorescence spectrum of *E. coli* treated by 75% alcohol after stained with 10 μM of IQ-Cm collected in the wavelength scanning mode of CLSM. Ex: 488 nm.

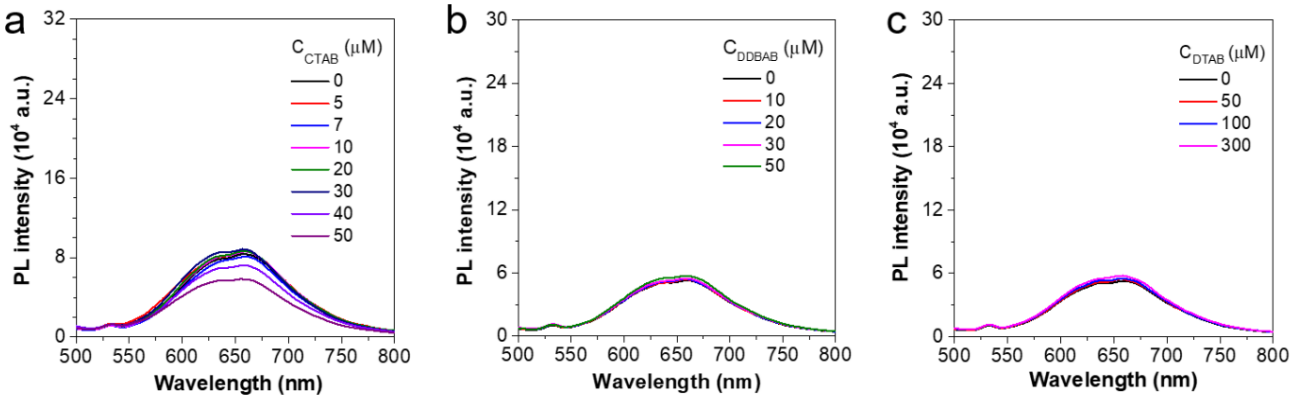

Figure S2. The effect of the antimicrobials on the emission of IQ-Cm. Fluorescence spectra of IQ-Cm (10 μM) in PBS solution with different concentration of three antimicrobials in the absence of *E. coli*, where (**a**) CTAB, (**b**) DDBAB or (**c**) DTAB, respectively.

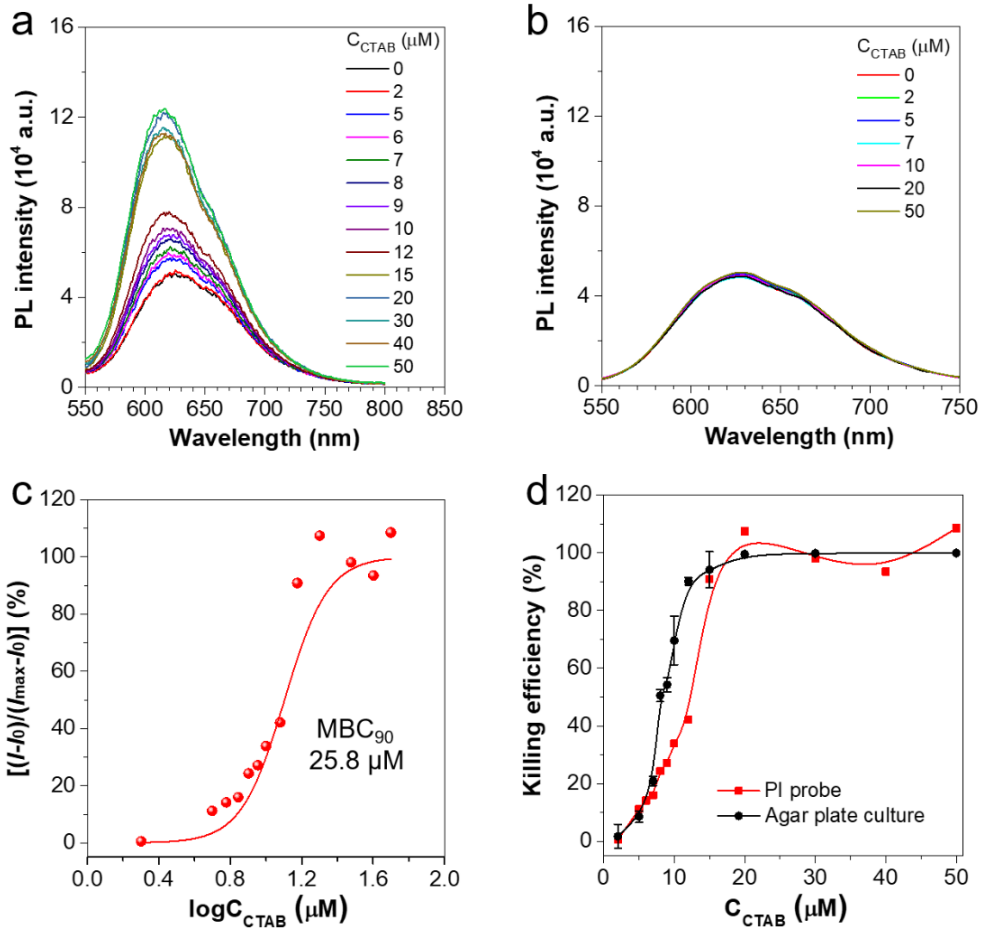

Figure S3. Evaluation of antimicrobial activity of CTAB by PI probe**.** (**a**) and (**b**) Fluorescence spectra of PI (5 μg/mL) with different concentrations of CTAB in the presence and the absence of *E. coli*, respectively. (**c**) Plot of relative fluorescence intensities $[(I - I_0)/(I_{max} - I_0)]$% of PI in *E. coli* PBS solution versus CTAB concentration, where I and I_{max} correspond to the fluorescence intensity and the achievable maximum emission of PI at 615 nm in the presence of *E. coli* treated by different concentration of CTAB, respectively, and I_0 is the initial emission in the group with *E. coli* but no CTAB. (**d**) The plots of antimicrobial activity towards *E. coli* of CTAB versus their concentration, evaluated by PI and agar plate culture.

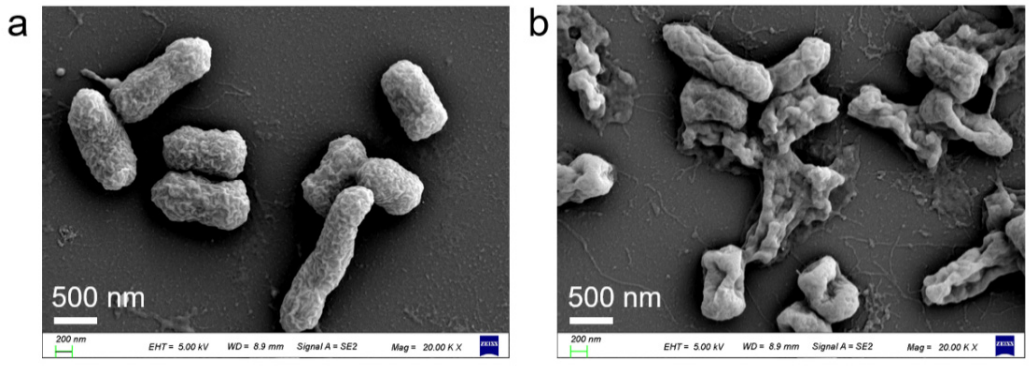

Figure S4. SEM images of *E. coli* without (**a**) and with (**b**) incubation with 20 μM of CTAB for 30 min.

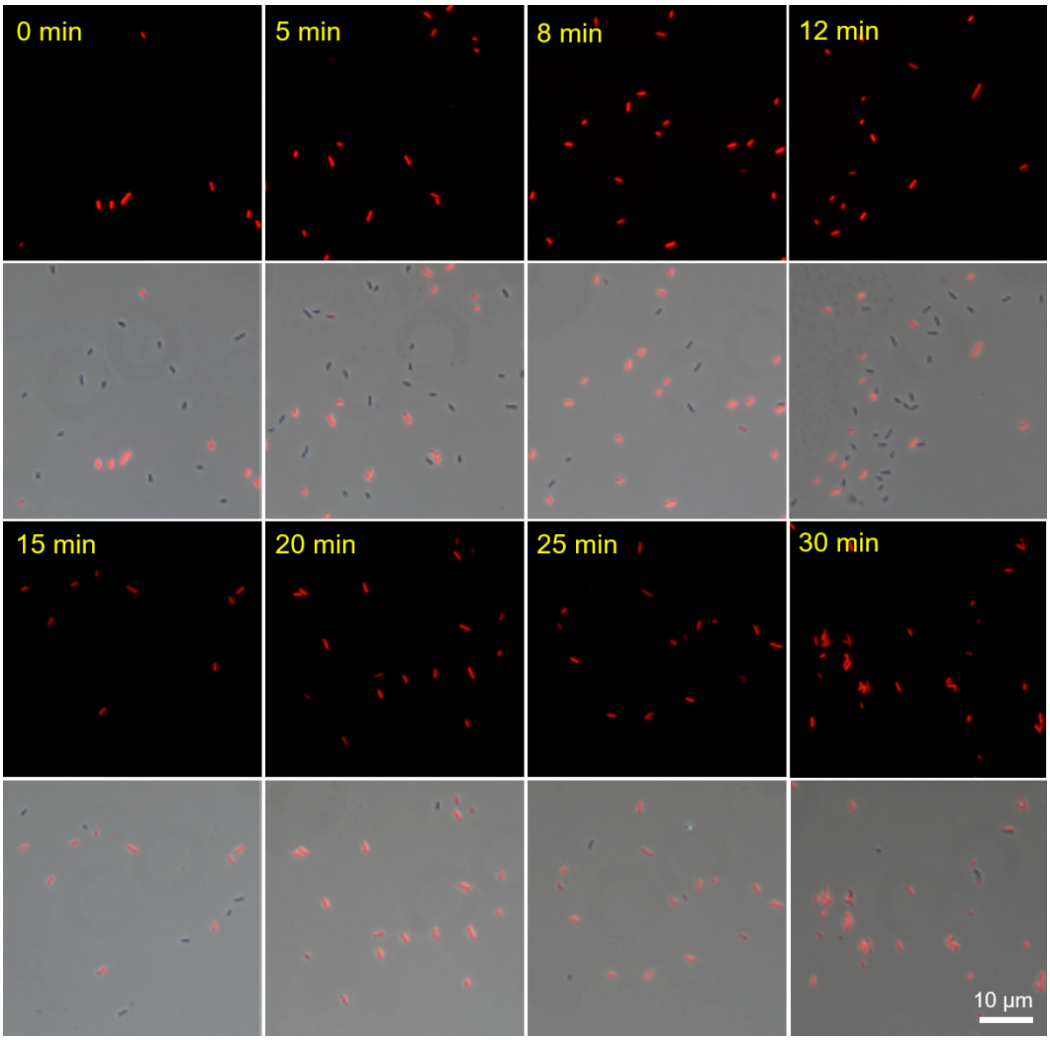

Figure S5. Fluorescence and merged images of *E. coli* treated by 20 μM of CTAB for different time and then stained by 5 μg/ml of PI for 10 min. Excitation filter = 510–550 nm, dichroic mirror = 570 nm, emission filter = 590 nm long pass.