

## 1 Supporting Information

## 2 An antibiotic concentration gradient microfluidic device integrating surface-enhanced 3 Raman spectroscopy for multiplex antimicrobial susceptibility testing

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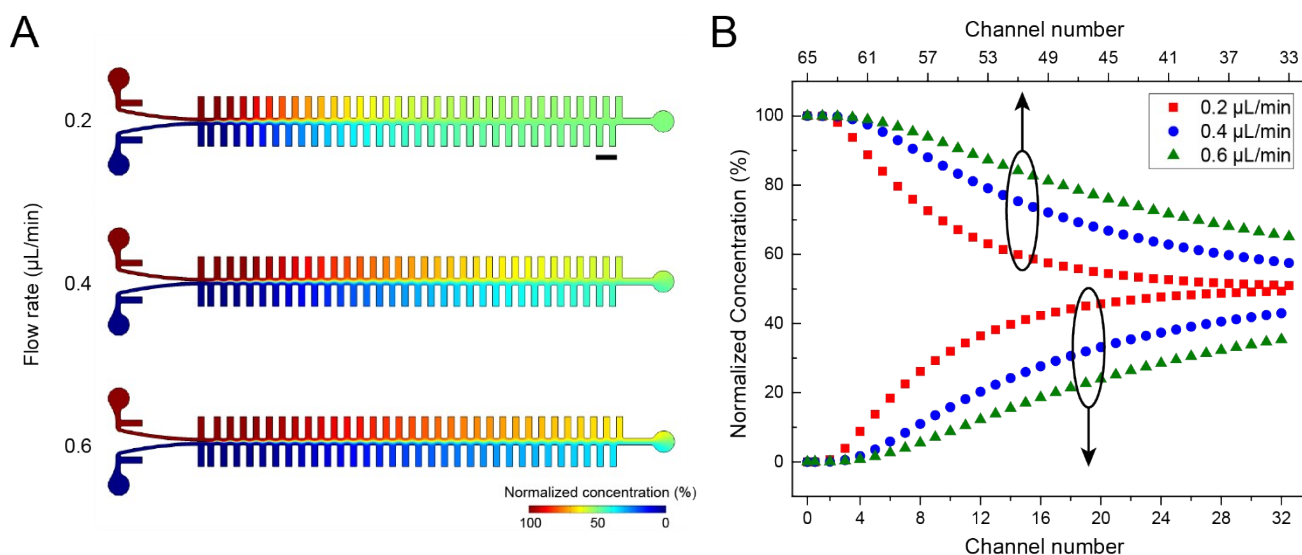
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## 16 Supplementary Figures

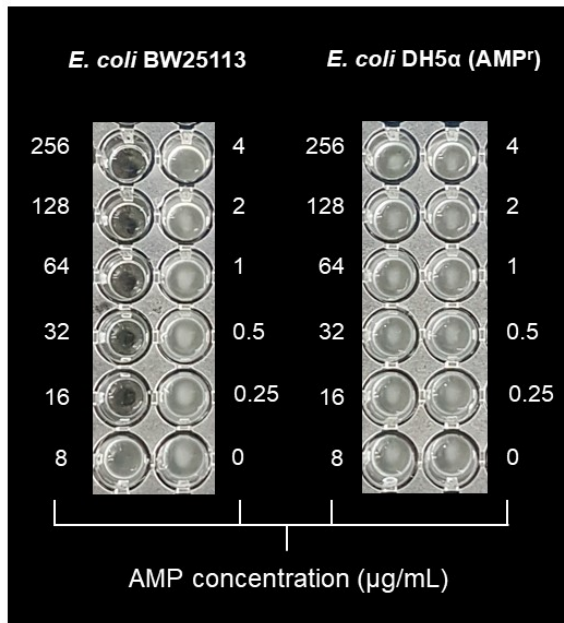


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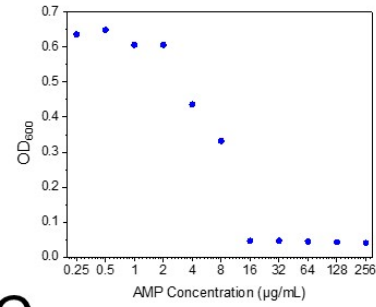
18 Figure S1 COMSOL simulation of (A) concentration distribution. Scale bar: 1 mm. (B) The normalized

19 concentration profiles for 0.2 (red), 0.4 (blue) and 0.6 (green)  $\mu\text{L}/\text{min}$ .

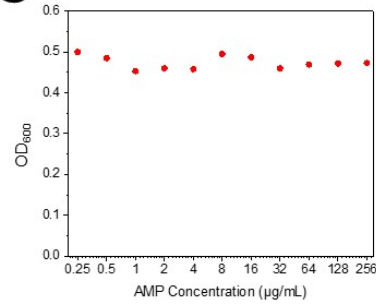
A



B



C



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21 Figure S2. (A) MIC determination of susceptible and resistant *E. coli* strains using the BMD method; OD  
 22 values of (B) susceptible and (C) resistant *E. coli* strains were calculated at AMP concentration of 0, 0.25, 0.5,  
 23 1, 2, 4, 8, 16, 32, 64, 128 and 256 μg/mL. Based on the plots, we can determine that the MIC value of  
 24 susceptible *E. coli* is 16 μg/mL, while the MIC value of this resistant strain was higher than 256 μg/mL.

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