Supplementary Information

Multivalent Polymer-Au Nanocomposites with cationic surfaces displaying enhanced antimicrobial activity

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S1. FTIR assay

FTIR assay was used to further characterize the structural change of PDMAEMA, as shown in Fig. S1. The increased band intensities of C-H stretching (2924 cm\(^{-1}\)) and C-N stretching (1151 cm\(^{-1}\)) in the IR spectrum of PDMAEMA-C\(_4\) suggested the successful conversion of the tertiary amines to quaternary amines. FTIR spectra can also confirm the possible group of PDMAEMA-C\(_4\) linking to AuNPs. When compared with the spectrum of PDMAEMA-C\(_4\), the band of AuNPs@PDMAEMA-C\(_4\) at 616 cm\(^{-1}\) (C-S stretching) was vanished, indicating the binding of PDMAEMA-C\(_4\) to AuNPs mainly generated via thiol group from the reduction of PDMAEMA-C\(_4\).\(^{S1}\)

Fig. S1. FTIR spectra of PDMAEMA (a), PDMAEMA-C\(_4\) (b) and AuNPs@PDMAEMA-C\(_4\) (c).
S2. TEM image

Fig. S2. TEM image of AuNPs@PDMAEMA-C₄.

References