Electronic Supplementary Material (ESI) for Polymer Chemistry

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]

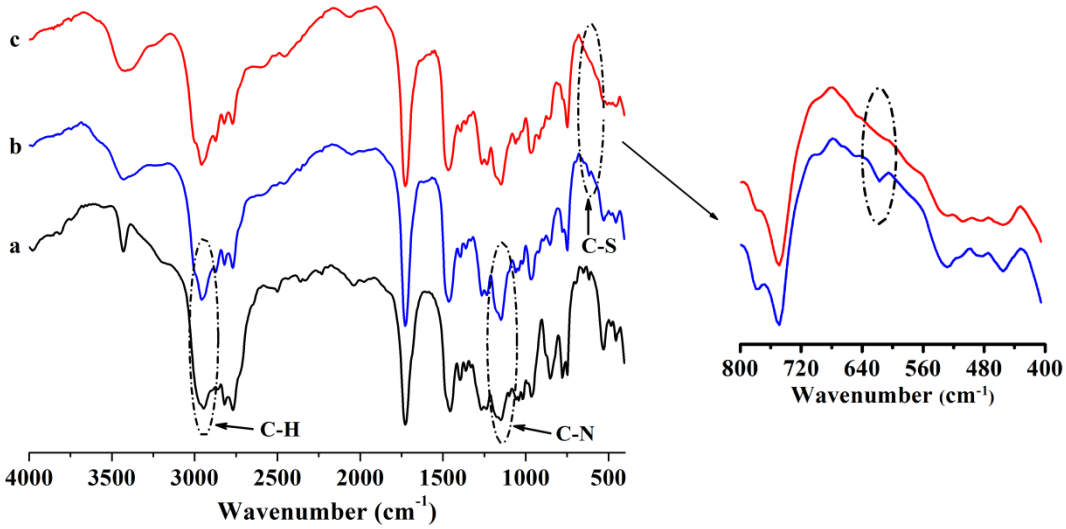

Fig. S1. FTIR spectra of PDMAEMA (a), PDMAEMA-C_4 (b) and AuNPs@PDMAEMA-C_4 (c).

S2. TEM image

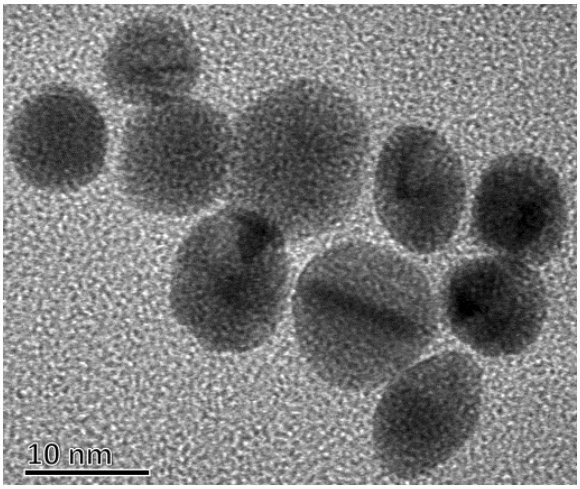

Fig. S2. TEM image of AuNPs@PDMAEMA-C_4.

References

S1. A. B. Lowe, B. S. Sumerlin, M. S. Donovan and C. L. McCormick, *J Am Chem Soc.* 2002, **124**, 11562-31156.