Supporting Information for

Ultrasensitive surface-enhanced Raman scattering nanosensor for mercury ion detection based on functionalized silver nanoparticles

Lingxin Chen*[a], Nan Qi,[ab] Xiaokun Wang[ac], Ling Chen[ad], Huiyan You*[b], Jinhua Li[a]

[a] Key Laboratory of Coastal Environmental Processes and Ecological Remediation, Shandong Provincial Key Laboratory of Coastal Environmental Processes, Yantai Institute of Coastal Zone Research, Chinese Academy of Sciences, Yantai 264003, China

[b] Environmental and Chemical Engineering College, Dalian University, Dalian 116600, China

[c] College of Chemistry and Chemical Engineering, Qufu Normal University, Qufu 273165, China

[d] University of Chinese Academy of Sciences, Beijing 100049, China

* Correspondence author.

Prof. L. Chen; Tel.: +86 535 2109130; Fax: +86 535 2109130.

E-mail: lxchen@yic.ac.cn.

Prof. H. You; Tel.: +86 411 87402440; Fax: +86 411 87402436.

E-mail: dlyhy@dicp.ac.cn

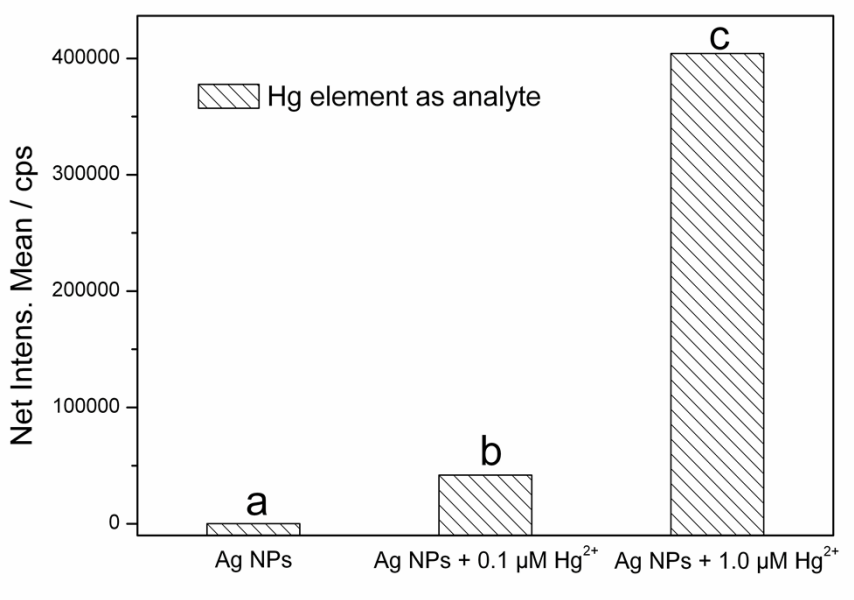

Fig. S1. The ICP-MS intensities of Hg in the precipitates obtained from the solution of Ag NPs functionalized with 4-MPY (a), after addition of 0.1 μM Hg^{2+} (b), 1.0 μM Hg^{2+} (c) to a solution of 4-MPY–AgNPs-based sensing system. The precipitates were obtained by five cycles of centrifugation of the resulting solution.

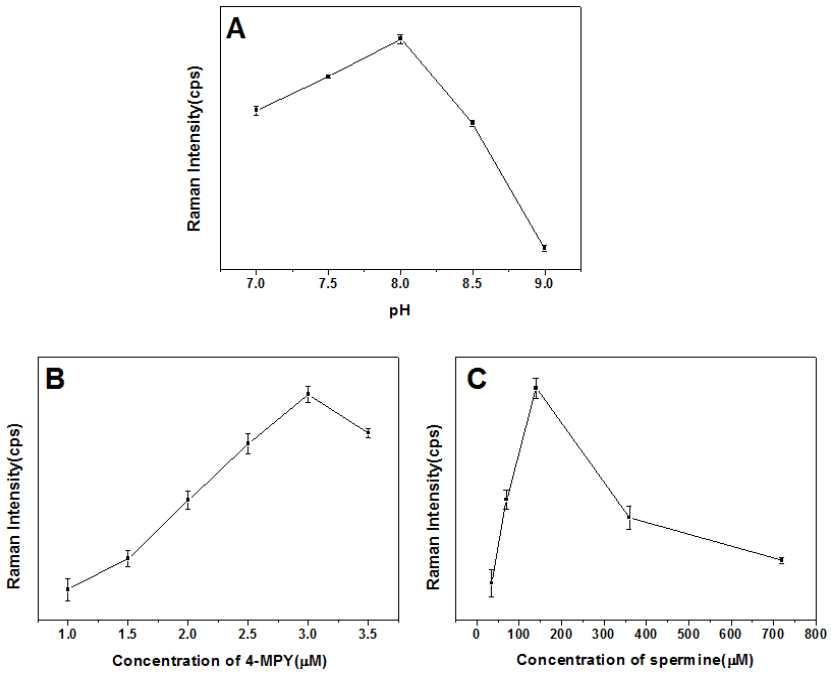

Fig. S2. Effect of (A) the pH value of a Tris-HCl buffer solution (from 7.0 to 9.0), (B) the concentration of 4-MPY (from 1.0 to 3.5 μM), and (C) the concentration of spermine (from 35 to 720 μM) of the sensing system on the Raman signal intensity. The error bars represent the standard deviations based on three independent measurements.