

Supplementary Information

for

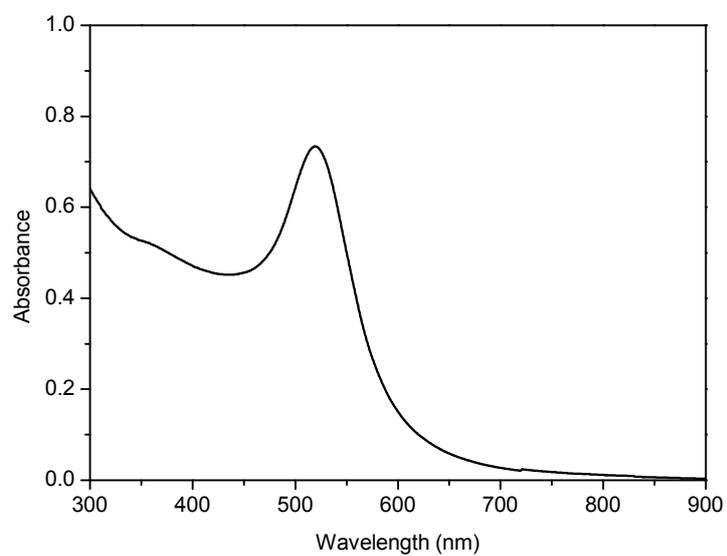
**Synthesis and application of surface enhanced Raman scattering (SERS) tags of Ag@SiO<sub>2</sub> core/shell nanoparticles in protein detection**

Xianming Kong,<sup>a</sup> Qian Yu,<sup>ab</sup> Xianfeng Zhang,<sup>a</sup> Xuezhong Du,<sup>\*a</sup> Hong Gong<sup>\*b</sup>  
and Heng Jiang<sup>b</sup>

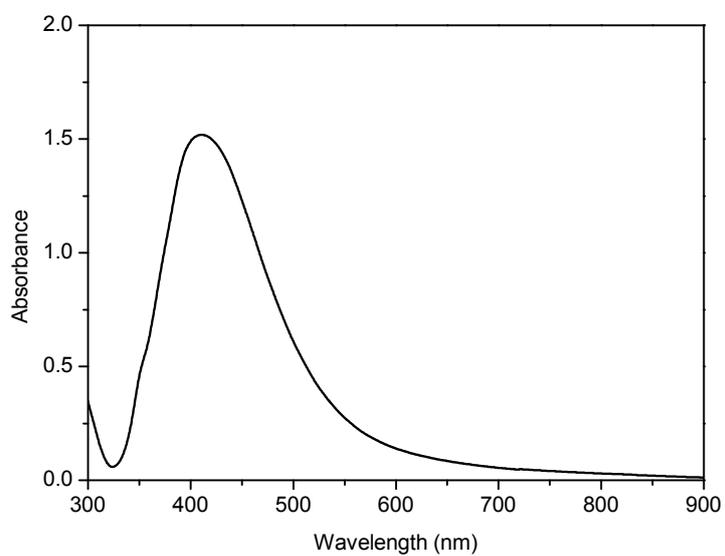
---

<sup>a</sup>Key Laboratory of Mesoscopic Chemistry (Ministry of Education), State Key Laboratory of Coordination Chemistry, and School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210093, P. R. China. E-mail: xzdu@nju.edu.cn. Fax: 86-25-83317761

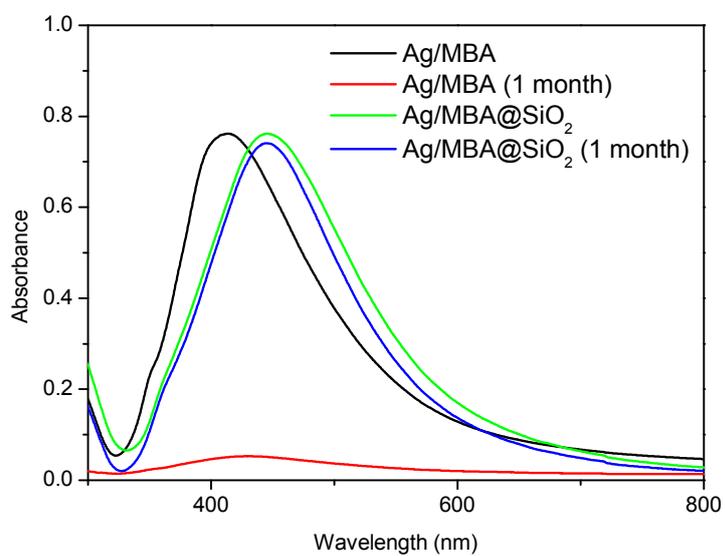
<sup>b</sup>College of Chemistry and Materials Science, Liaoning Shihua University, Fushun 113001, P. R. China



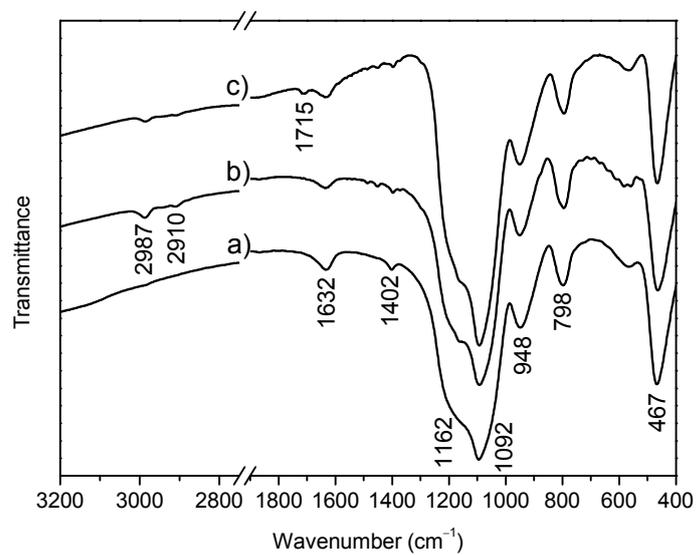
**Fig. S1** UV-vis spectrum of Au colloids with a quarter of original concentration.



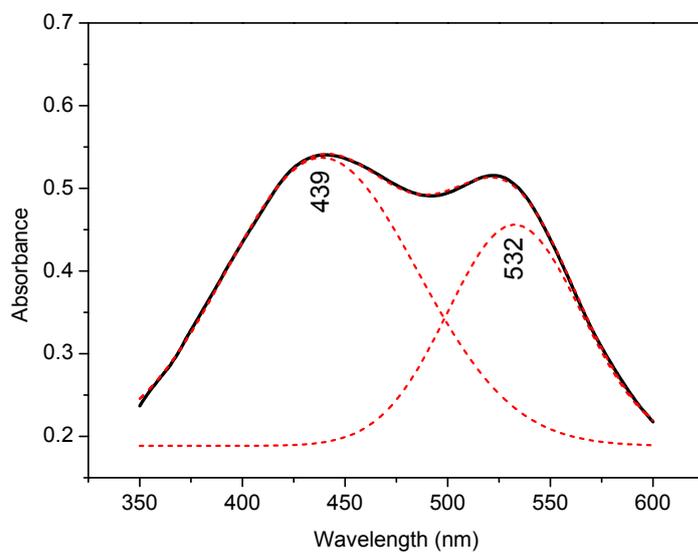
**Fig. S2** UV-vis spectrum of Ag colloids with a quarter of original concentration.



**Fig. S3** UV-vis spectra of Ag colloids and Ag@SiO<sub>2</sub> tag nanoparticles before and after one month.



**Fig. S4** FTIR spectra of Ag@SiO<sub>2</sub> SERS tags before (a) and after (b) APTMS and (c) GA modifications.



**Fig. S5** The fitted profiles of the UV-vis spectrum of Au-adsorbed Ag@SiO<sub>2</sub> SERS tag composite nanoparticles.