Electronic Supplementary Material (ESI) for Analyst.

High-affinity Fe_3O_4/Au probe with synergetic effect of surface plasmon resonance and charge transfer enabling improved SERS sensing of dopamine in biofluids

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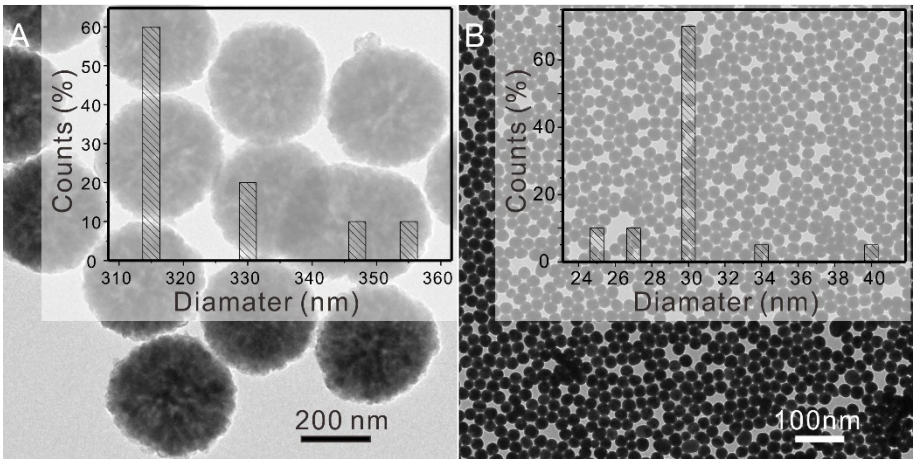

Figure S1: The TEM images and size distribution of (A) Fe_3O_4 and (B) Au NPs.

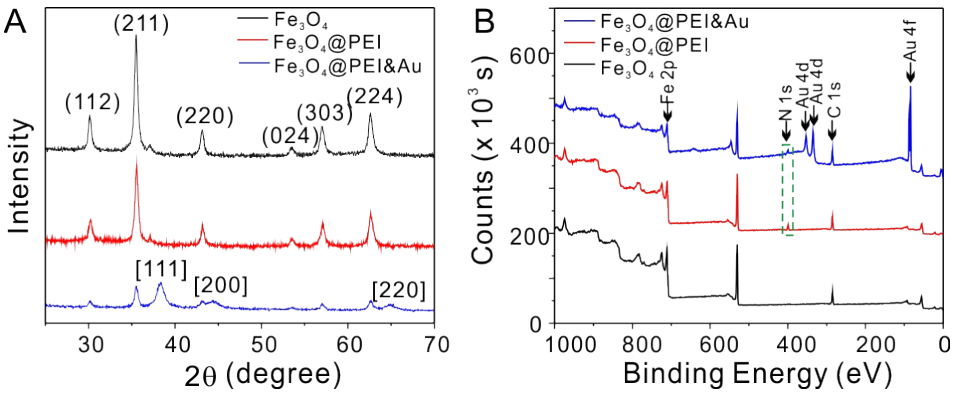

Figure S2: (A) The X-ray diffraction (XRD) and (B) X-ray photoelectron spectroscopy (XPS) analysis of Fe_3O_4/Au nanocomposite.

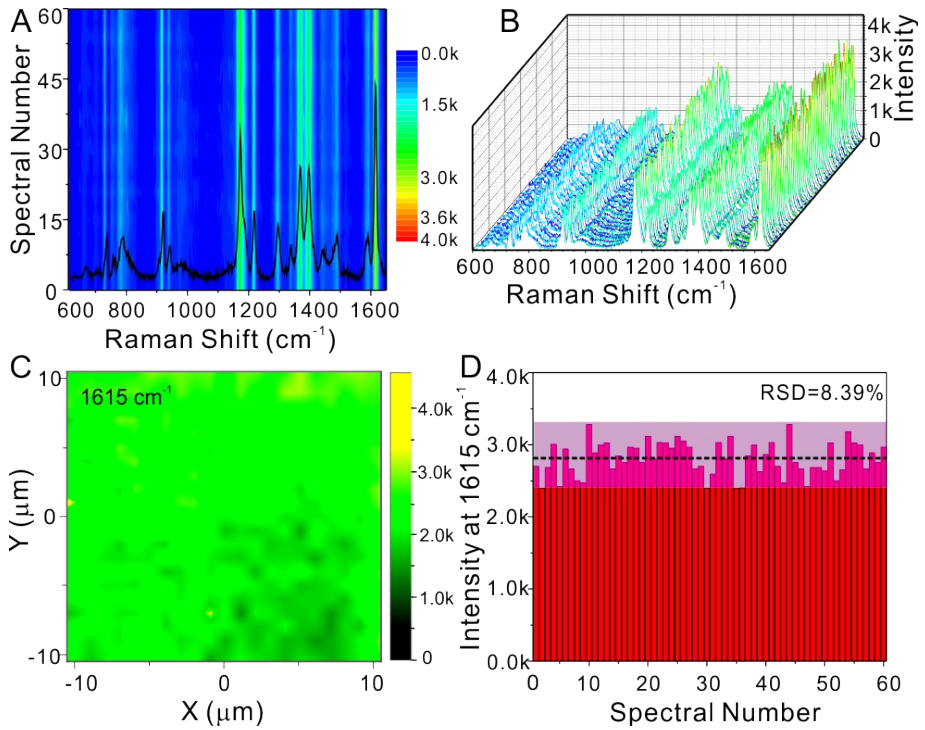

Figure S3: (A and B) SERS spectra of MG molecules collected from 60 randomly chosen sites on the Fe_3O_4/Au NPs substrates. (C and D) The area mapping and intensity distribution of 1615 cm^{-1} characteristic peak and the statistical deviation of 1615 cm^{-1} of MG collected from 60 randomly sites in C area.

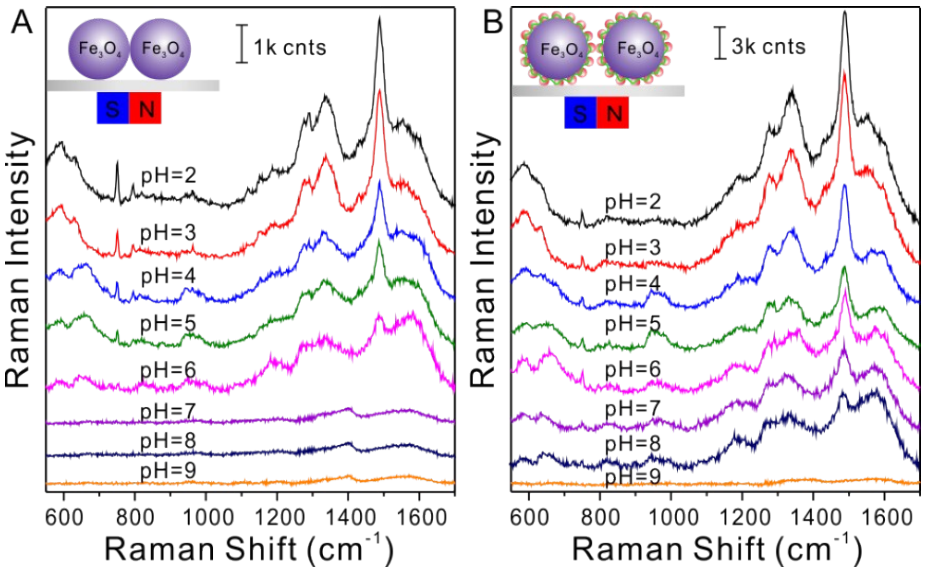

Figure S4: The SERS spectra of DA molecules within different pH condition by using (A) the Fe_3O_4 and (B) Fe_3O_4/Au NPs as SERS active substrates.

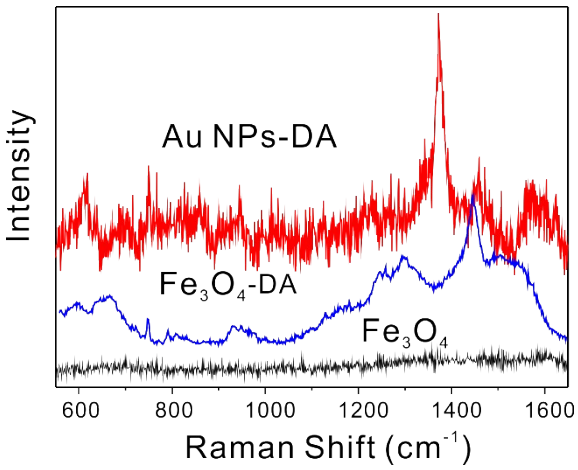

Figure S5: The SERS spectrum of bare Fe_3O_4 (black line) and the SERS spectrum DA molecules on Au NPs (red line) and bare Fe_3O_4 (blue line).

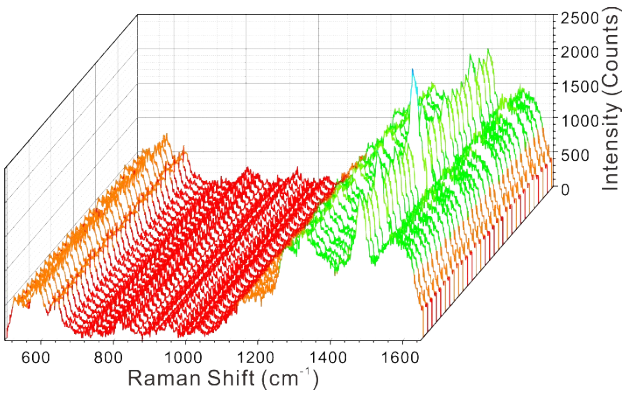

Figure S6: The SERS spectra of DA molecules (5 μM) randomly collected from the Fe_3O_4/Au NPs active substrates.