Electronic Supplementary Material (ESI) for RSC Advances.


# Fluorescent small Au nanodots prepared from large Ag nanoparticles for targeting and imaging cancer cells

Yuanqing Sun,[a] Dandan Wang,[b] Lin Xu,[a] Tianxin Zhao,[a] Chuanxi Wang,*[c] Hongchen Sun[b] and Quan Lin*[a]

[a]*State Key Laboratory of Supramolecular Structure and Materials, College of Chemistry, Jilin University, Changchun, 130012, P. R. China*

[b]*School of Stomatology, Jilin University, Changchun, 130041, P.R. China*

[c]*China-Australia Joint Research Centre for Functional Molecular Materials, School of Chemical & Material Engineering, Jiangnan University, Wuxi 214122, P. R. China*

*Corresponding author. E–mail address: linquan@jlu.edu.cn*

*wangcx@jiangnan.edu.cn*

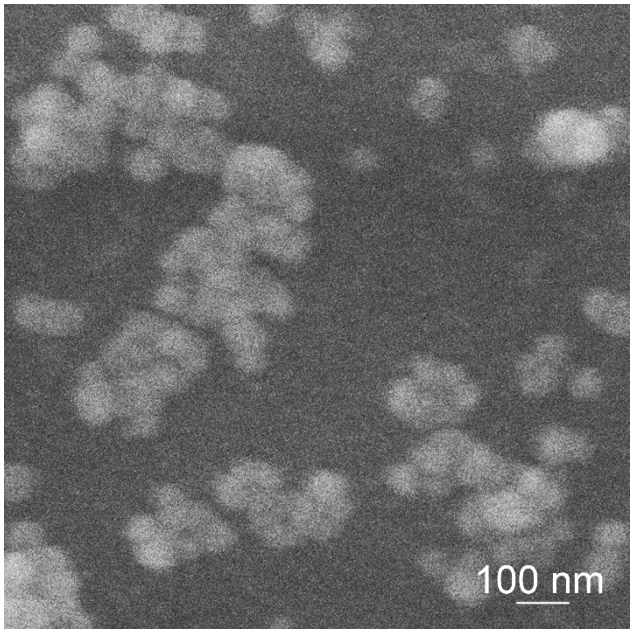


**Fig. S1** The typical SEM image of as-prepared Ag NPs and the average size was 78 nm.

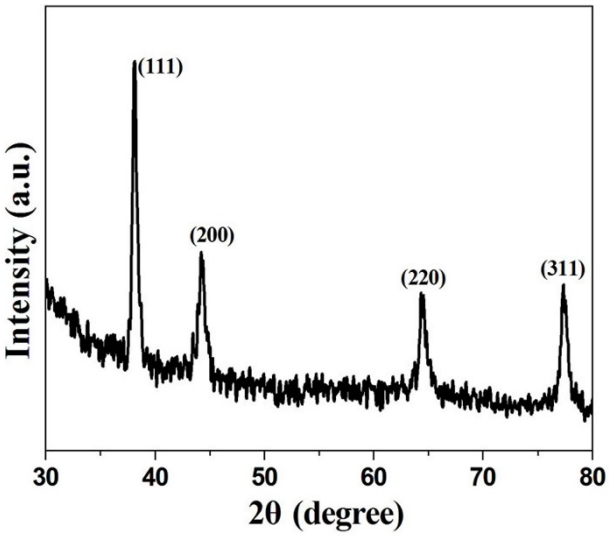


**Fig. S2** The XRD pattern of the as-prepared Ag NPs.

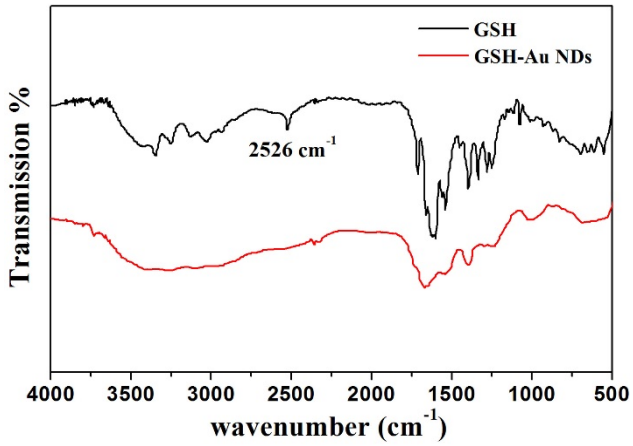


**Fig. S3** The FT-IR spectra of resultant fluorescent GSH-Au NDs and pure GSH, which confirmed the surface of resultant Au NDs was protected by GSH.

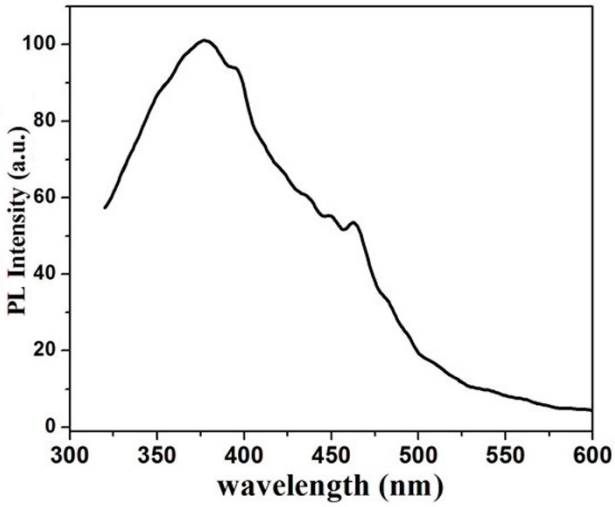


**Fig. S4** The excitation (EX) spectrum of resultant fluorescent Au NDs in aqueous solution.

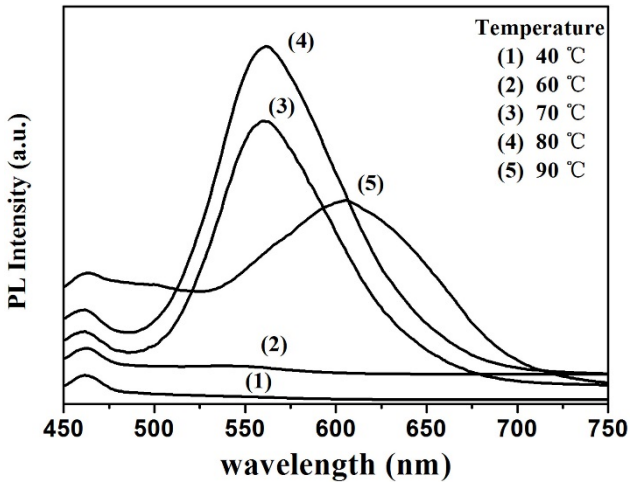


**Fig. S5** The PL spectra of resultant fluorescent Au NDs under different reaction temperature.

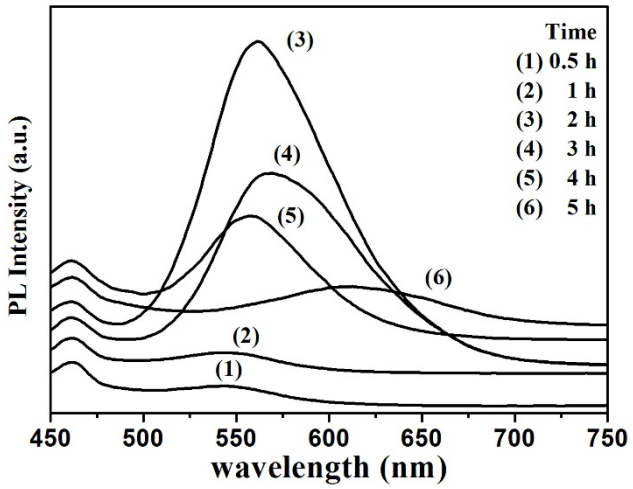


**Fig. S6** The PL spectra of resultant fluorescent Au NDs under different reaction time.

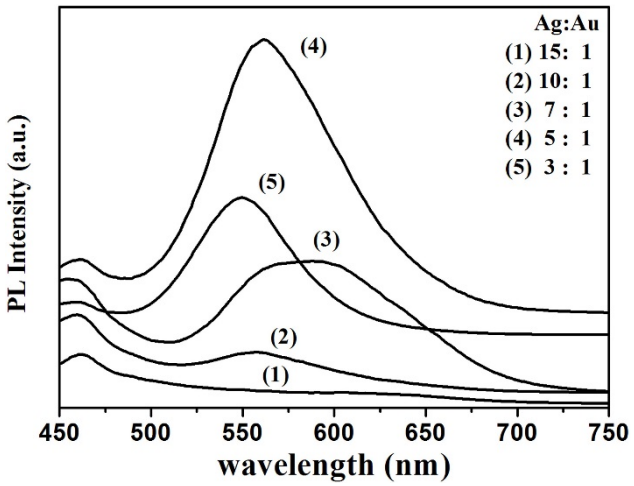


**Fig. S7** The PL spectra of resultant fluorescent Au NDs under different the molar ratios of Ag NPs to $AuCl_4^-$ ions.

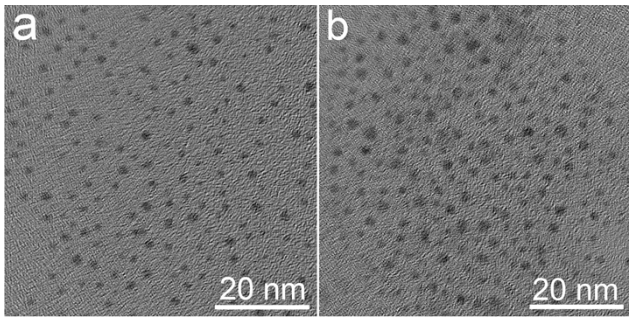


**Fig. S8** The TEM image of as-prepared Au NDs with the concentrations at a) 0.040 M and b) 0.133 M of GSH.

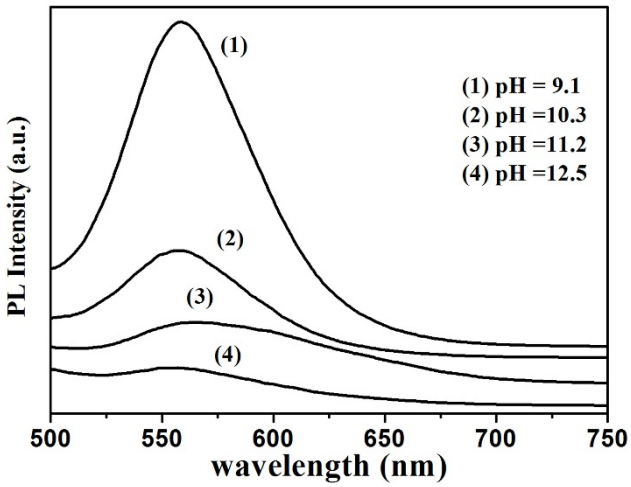


**Fig. S9** the PL spectra of resultant Au NDs prepared with different pH value.

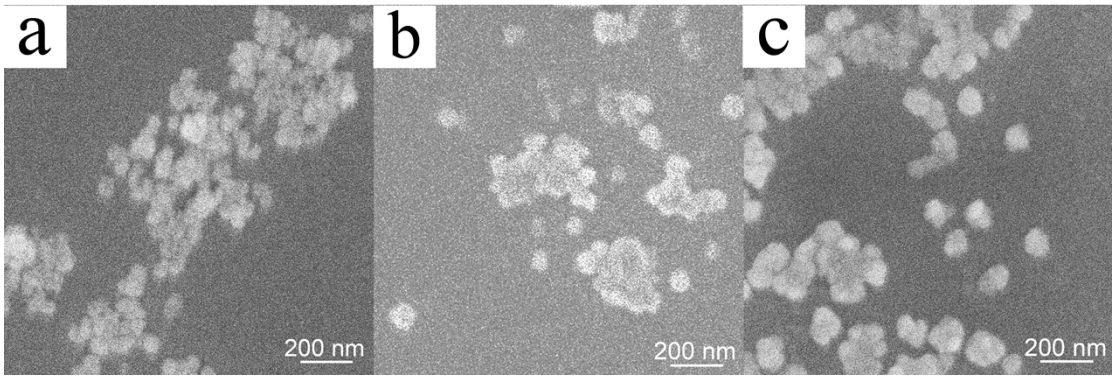


**Fig. S10** The SEM images of three various sized Ag NPs of a) 50 nm; b) 78 nm; c) 90 nm.

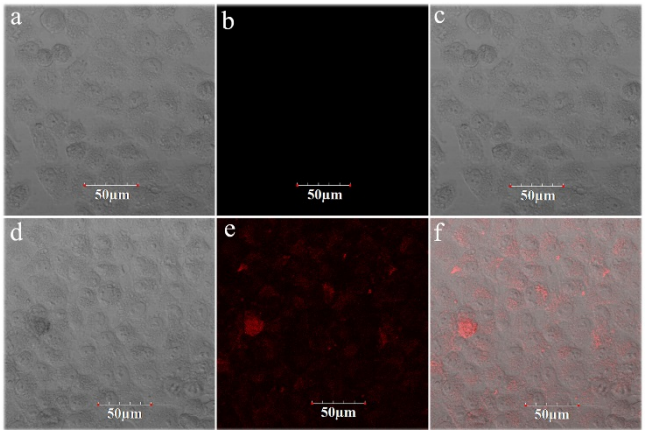


**Fig. S11** Fluorescence imaging showing the delivery of Au NDs into the HeLa cells after incubation for (a-c) 4 h and (d-f) 12 h. The images of bright field (a, d), confocal fluorescence (b, e), and the overlay (c, f) were all recorded.

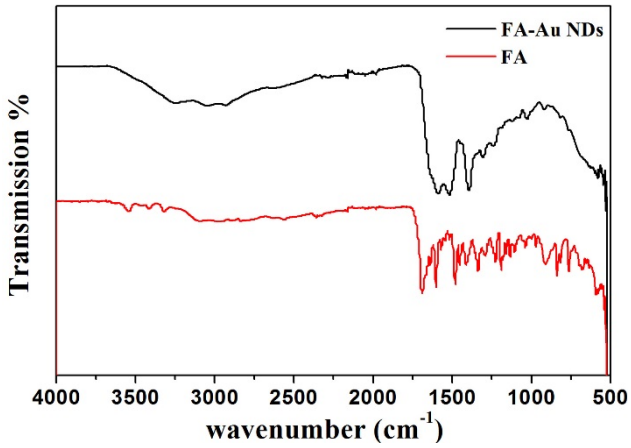


**Fig. S12** The FT-IR spectra of resultant fluorescent FA-conjugated Au NDs and pure FA, which confirmed the surface of resultant Au NDs was conjugated with FA.

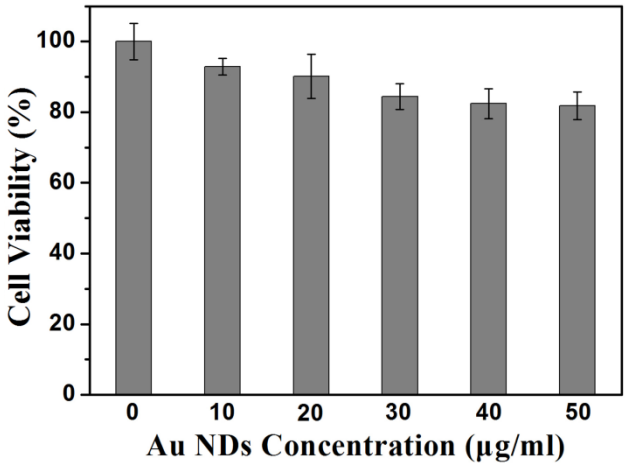


**Fig. S13** Viability of 293T cells after 24 h of incubation with different concentrations of fluorescent FA-conjugated Au NDs in the cell medium as determined by a MTT assay.