Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

One-step synthesis of peptide conjugated gold nanoclusters for the high expression of the FGFR2 tumor targeting and imaging

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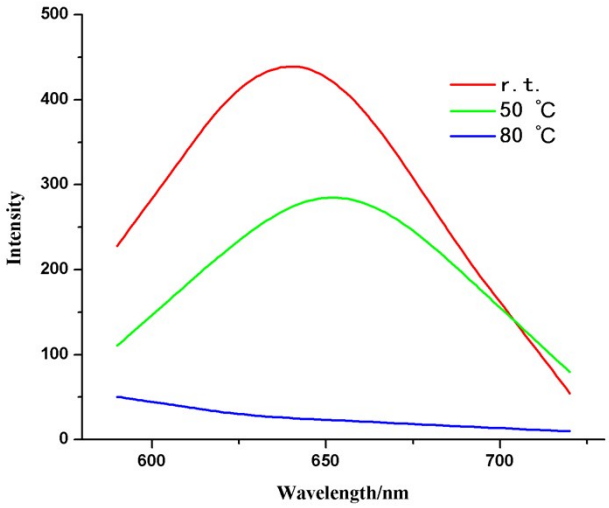

Figure S1. The fluorescence spectra of the products at different temperatures. (the excitation wavelength at 380 nm and the emission wavelength at 640 nm). All of the reactions lasted 18 h. The red, green and blue curves represent room temperature, 50 °C and 80 °C.

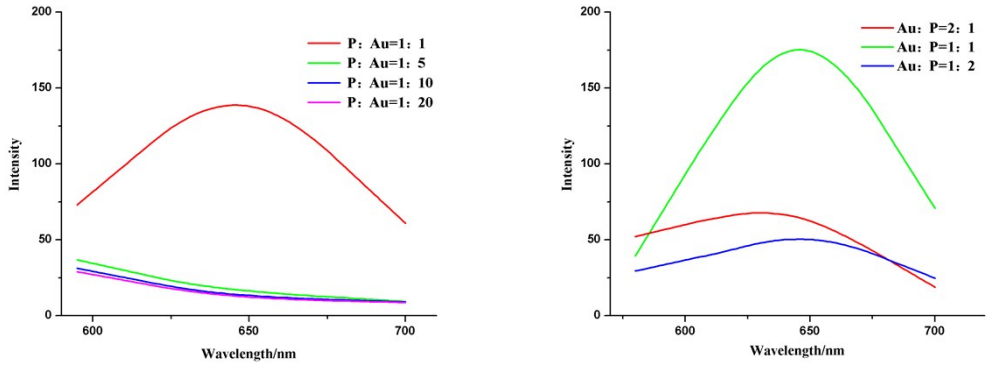

Figure S2. The fluorescence spectra of the products at different ratio of raw materials. (the excitation wavelength at 380 nm and the emission wavelength at 640 nm).

As shown in Figure S2, the optimized ratio of raw materials is that Au : P = 1 : 1. The result was consistent with the reaction mechanism mentioned in the paper. In the synthetic process, two thiol groups of the peptide interact with gold atom to form bidentate Au thiolate intermediates, e.g., -SR- $[Au\text{-}SR\text{-}]_2$.

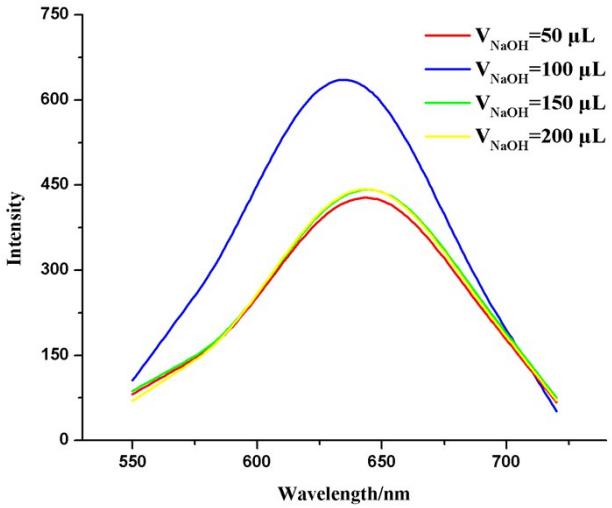

Figure S3. The fluorescence spectra of the products at different volume of sodium hydroxide. (the excitation wavelength at 380 nm and the emission wavelength at 640 nm). All of the reactions lasted 19 h. The ratio of raw materials is that Au : P = 1 : 1 (P represent CCYLQLQAEER-NH_2).

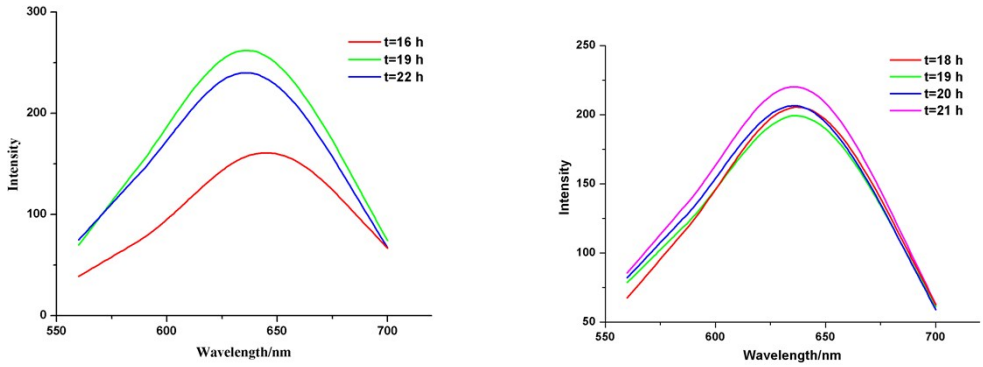

Figure S4. The fluorescence spectra of the products at different reaction time at room temperature (the excitation at 380 nm and the emission at 640 nm).

We investigated the reaction time two times. Initially, we obtained the raw range of reaction time. The measurement results showed that the fluorescence of the GNCs increased from 16 h to 19 h but decreased from 19 h to 22 h. Then we measured the fluorescence of the GNCs in the reaction time range of 18-21 h and found that there were no tremendous changes of fluorescence intensity between 18-21 h, which means there were no more CCYJNP5-GNCs formed. Thus, the optimized reaction time was set 18 h.

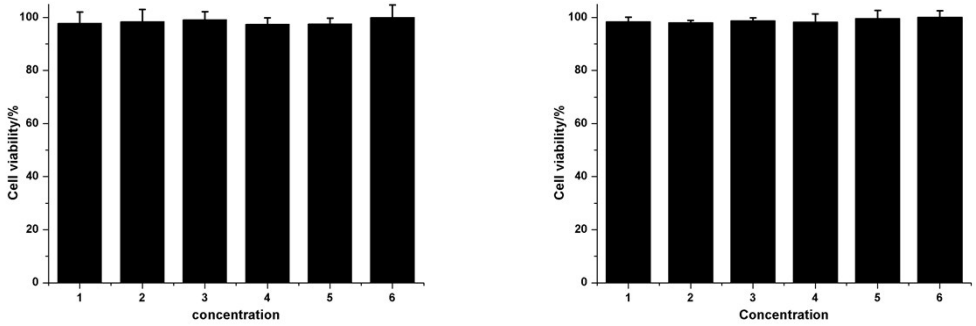

Figure S5. Cell viabilities for the KYSE510 (the left one) and the 293A cells (the right one) after treated with the CCYJNP5-GNCs at different concentrations. From left to right, the concentrations are 2.5, 1.2, 0.62, 0.31, 0.16, and 0 mg/mL, respectively.