Supporting Information

for

Polydopamine-coated Au nanorods for targeted fluorescent cell imaging and photothermal therapy

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Additional experimental data
S1. Calculation of the AuNR concentration

According our synthetic procedure, the final Au concentration is 0.5 mM. Let assume yield of nanorods in reaction about 85%, thus mass/volume concentration of Au is about \( c \approx 85 \mu g/mL \). According TEM data, AuNRs have s-cylinder shape with average length of \( L = 44 \) nm and width (diameter) of \( d = 11 \) nm. The volume of a single nanorod is

\[
V_i = \frac{1}{6} \pi d^3 + \pi (L - d) \frac{d^2}{4} = 697 + 3136 = 3833 \text{ nm}^3.
\]

With gold density \( \rho = 19.32 \) g/cm³, the average mass of a single nanorod is \( m_i = \rho V_i = 7.64 \times 10^{-11} \) g. The number concentration of nanorods is \( N = c / m_i = 1.12 \times 10^{12} \text{ mL}^{-1} \). Taking into account all approximation made, we assume the final number concentration to be about \( 10^{12} \) particles per mL.

S2. Calibration curve for determination of rhodamine 123 concentration

Figure S1: (A) Absorbance spectra of rhodamine 123 solutions with concentration from 100 to 0.5 µM (double dilutions) measured in 1 cm cuvette. (B) Calibration curve for determination of rhodamine 123 concentration from extinction measurements. Absorbance is measured at peak wavelength 500 nm.
S3. Dynamic light scattering study of nanocomposites at various pH

**Figure S2:** DLS size-distributions of AuNR-CTAB (A) and AuNR-PEG (B) in water; AuNR-PDA (C–E) and AuNR-PDA-R123-Folate (F–H) measured at pH 8.5 (C,F), 6.2 (D,G), and 4.4 (E,H).