



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 $c \approx 85 \mu\text{g/mL}$. According TEM data, AuNRs have s-cylinder shape with average length of $L = 44 \text{ nm}$ and width (diameter) of $d = 11 \text{ nm}$. The volume of a single nanorod is $V_1 = \frac{1}{6}\pi d^3 + \pi(L-d)\frac{d^2}{4} = 697 + 3136 = 3833 \text{ nm}^3$. With gold density $\rho = 19.32 \text{ g/cm}^3$, the average mass of a single nanorod is $m_1 = \rho V_1 = 7.64 \times 10^{-11} \text{ g}$. The number concentration of nanorods is $N = c/m_1 = 1.12 \times 10^{12} \text{ mL}^{-1}$. 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

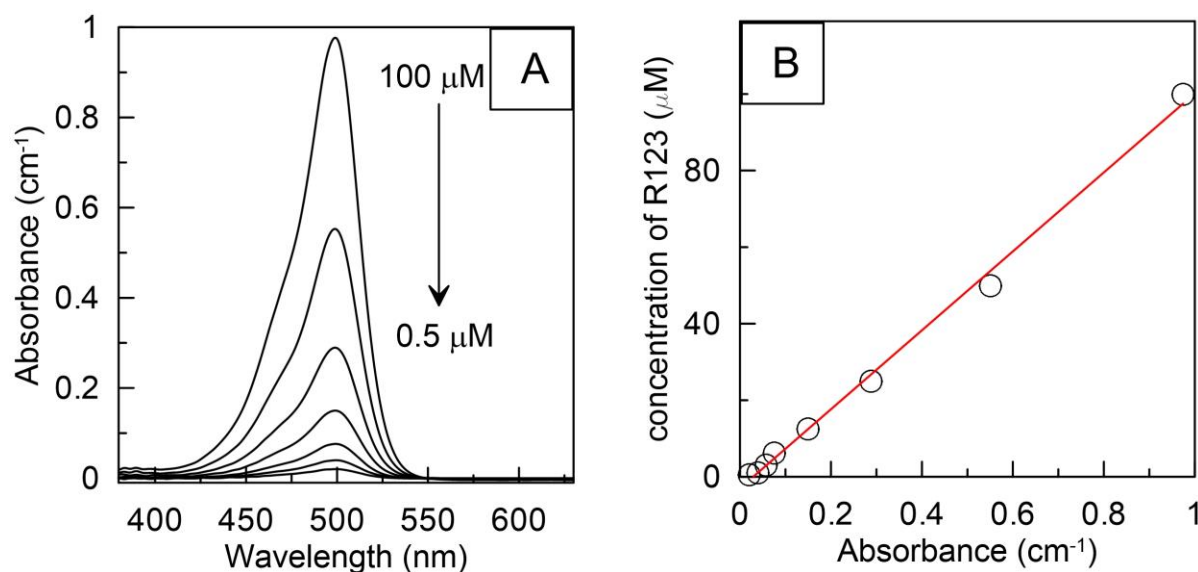


Figure S1: (A) Absorbance spectra of rhodamine 123 solutions with concentration from 100 to 0.5 μM (double dilutions) measured in 1 cm cuvette. (B) Calibration curve for determination of rhodamine 123 concentration from extinction measurements. Absorbance is measured at peak wavelength 500 nm.

S3. Dynamic light scattering study of nanocomposites at various pH

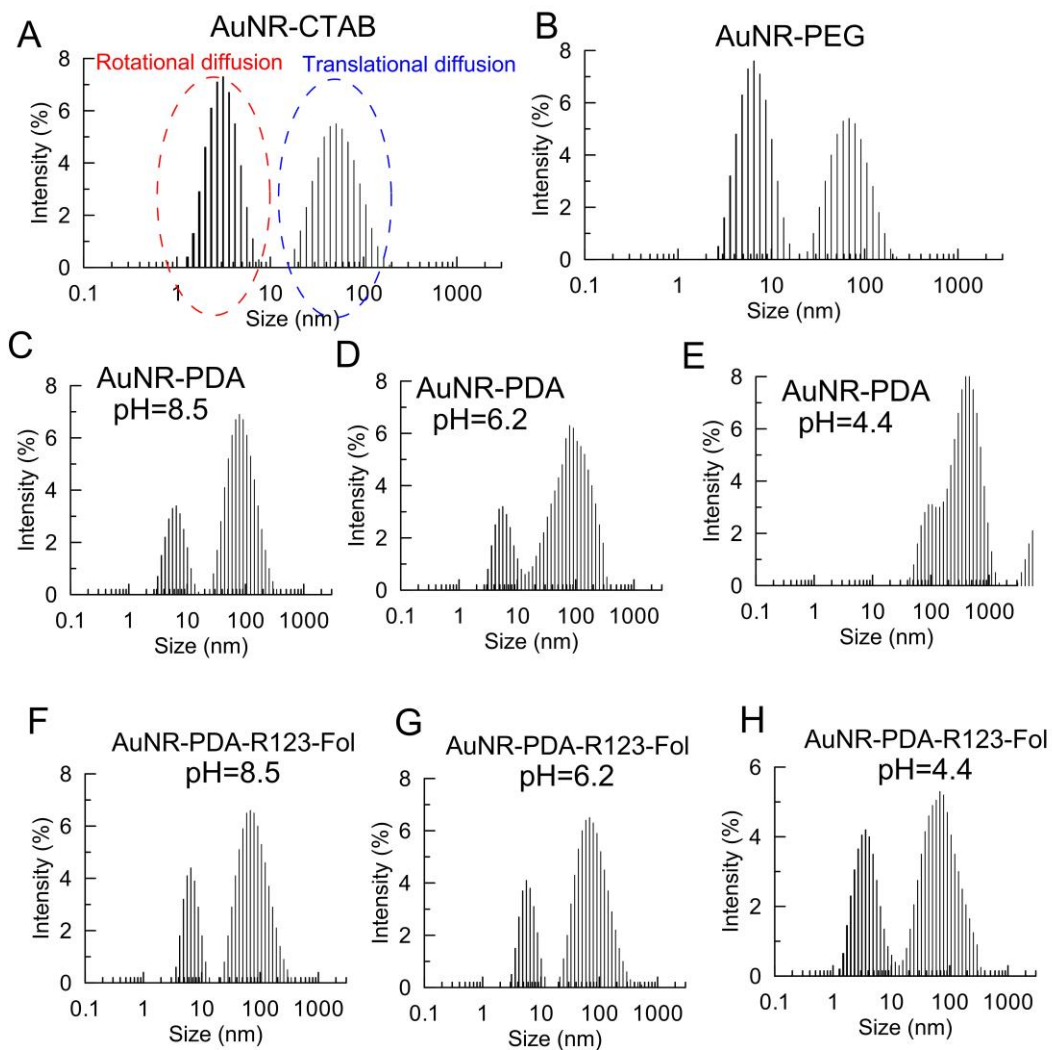


Figure S2: DLS size-distributions of AuNR-CTAB (A) and AuNR-PEG (B) in water; AuNR-PDA (C–E) and AuNR-PDA-R123-Folate (F–H) measured at pH 8.5 (C,F), 6.2 (D,G), and 4.4 (E,H).