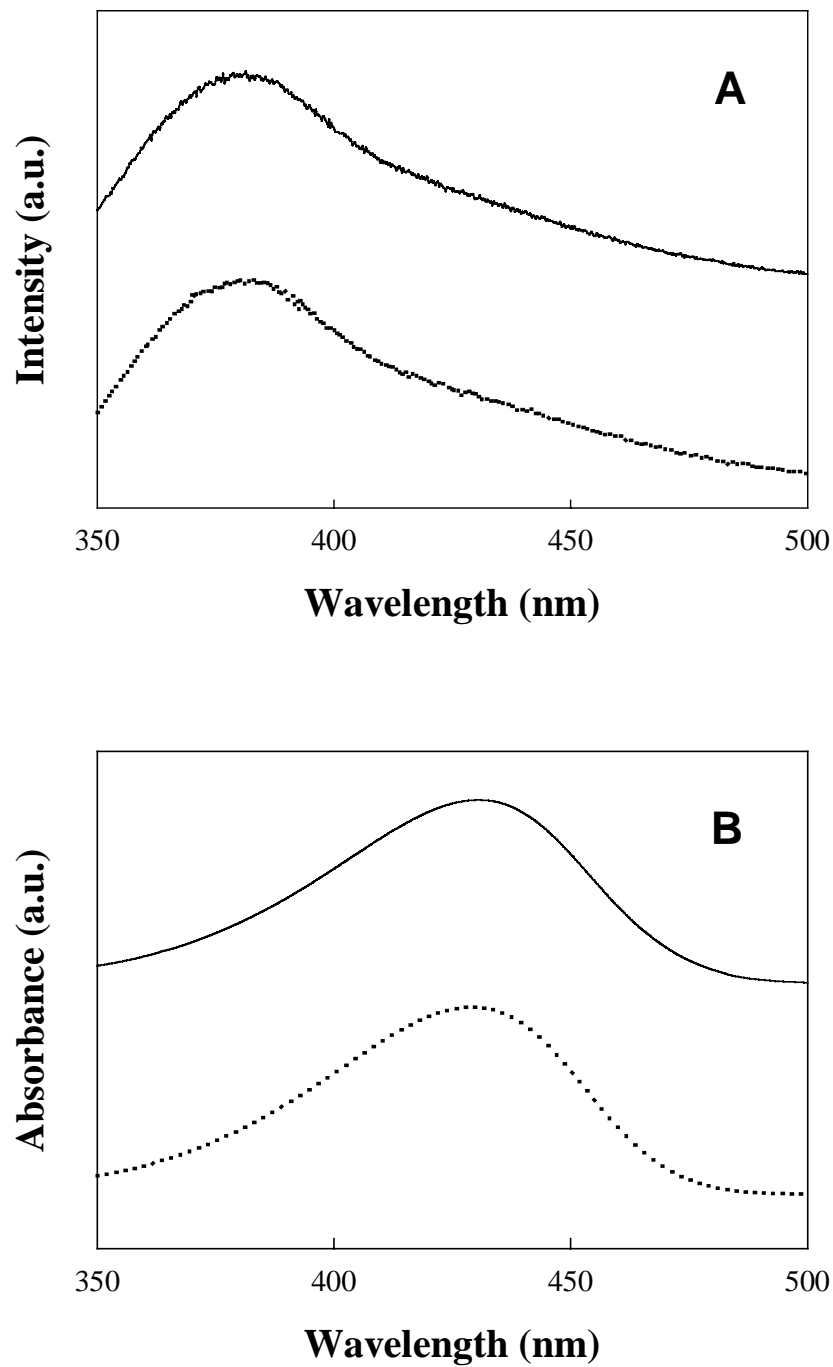**Figure S1.** (A) Fluorescence emission spectra of **5** at pH 6.0 (solid line) and pH 7.0 (dotted line).

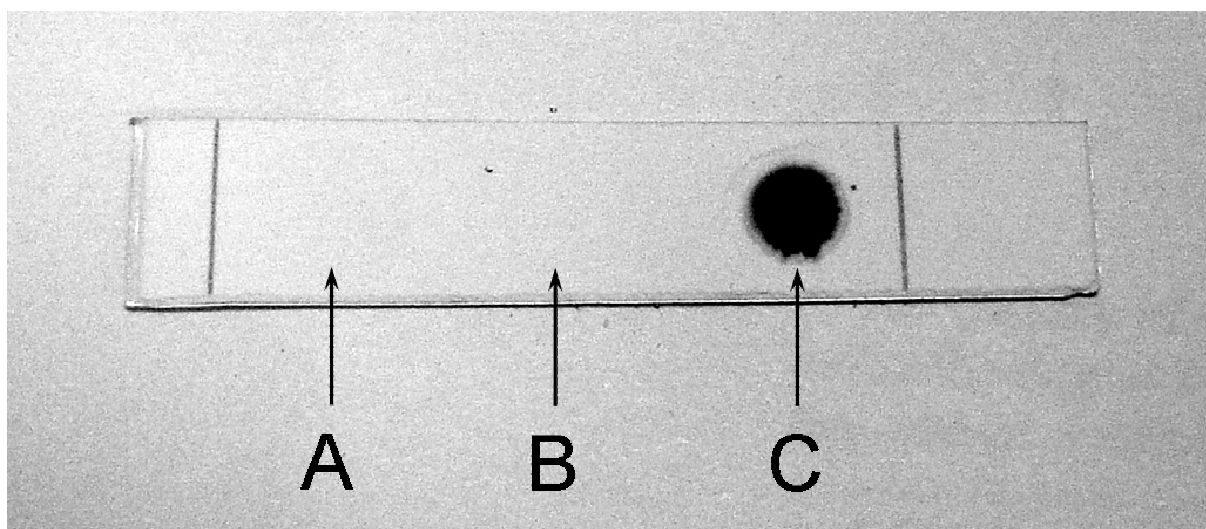(B) UV-visible spectra of coumarin 343 at pH 6.0 (solid line) and pH 7.0 (dotted line).

Figure S2. Results of Nynhidrin test are shown above. It is noted that the original color-version image was converted into the grayscale-version image: (A) Nynhidrin only; (B) Nynhidrin with **5**; (C) Nynhidrin with **6**.
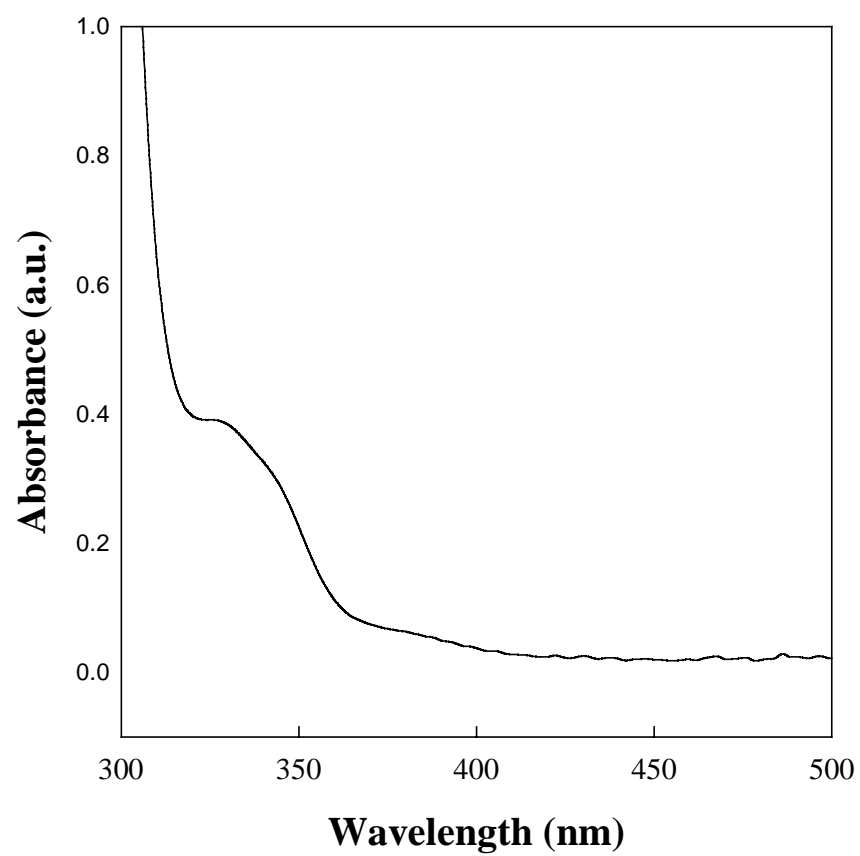
Figure S3. UV-visible spectrum of **6** in pH 8.0.

We estimate the Forster Critical Radius (R_{o} (Å)) defined as $R_{\mathrm{o}} = 9.7 \times 10^3 \left(\dfrac{\kappa^2 \Phi_{\mathrm{D}} J}{n^4} \right)^{\frac{1}{6}}$,[1] where κ^2, the orientation factor, is assumed to be 2/3 for random orientation; n, the refractive index of the medium, is usually taken as 1.4 for aqueous mediums in biological studies; Φ_{D}, the quantum yield of the donor in the absence of the acceptor is 0.05 when it is measured in pH 8.0 aqueous solution using an integrating sphere with He/Cd laser as the excitation light source;[2] J, the overlap integral, is defined as $J = \dfrac{\int F(\lambda) \varepsilon(\lambda) \lambda^4 d\lambda}{\int F(\lambda) d\lambda}$, where $F(\lambda)$ is the fluorescence of the donor in arbitrary units, $\varepsilon(\lambda)$ is the extinction coefficient of the acceptor in $\mathrm{cm}^{-1} \cdot \mathrm{M}^{-1}$, and λ is in cm. When the values of parameters are substituted in the Forster equation, R_{o} is finally estimated to be 24.3 Å (see Supporting Information page 4).

(1) Stryer, L. *Annu. Rev. Biochem.* **1978**, *47*, 819.

(2) J.C. deMello. J. C., Wittmann, H. F., Friend R. H. *Adv. Mater.* **1997**, *9*, 230.