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A quinoline-based fluorometric and colorimetric dual-modal pH probe and its application in bioimaging

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ABSTRACT: The compound (*E*)-8-hydroxyl-2-[(*E*)-2-(2, 4-dihydroxyphenyl)vinyl]-quinoline (**1**) has been developed as a fluorometric and colorimetric dual-modal probe for pH detection in solution and *in vivo*. Remarkable changes in the fluorescence intensity with large Stokes shifts and colorimetric responses were observed as a function of pH. The sensing mechanisms involving protonation and deprotonation processes over the acidic and alkaline pH ranges were confirmed by ^{1}H NMR and IR spectroscopic analysis. Furthermore, the application of probe **1** for the imaging of live PC3 cells was successfully achieved. Test strips based on probe **1** were fabricated, and were found to act as a convenient and efficient pH test kits.

Keywords: Quinoline, pH probe, Fluorometric, Colorimetric, Bioimaging

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