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Title:	Aminoindole and naphthalimide based charge transfer fluorescent probes for pH sensing and live cell imaging
Authors:	Sharma, Sushil (/jspui/browse?type=author&value=Sharma%2C+Sushil) Srinivas, Sai (/jspui/browse?type=author&value=Srinivas%2C+Sai) Rakshit, Sabyasachi (/jspui/browse?type=author&value=Rakshit%2C+Sabyasachi) Sengupta, Sanchita (/jspui/browse?type=author&value=Sengupta%2C+Sanchita)
Keywords:	Aminoindole Naphthalimide Fluorescent probes Cell imaging
Issue Date:	2022
Publisher:	Royal Society of Chemistry
Citation:	Organic and Biomolecular Chemistry, 20(47), 9422-9430
Abstract:	Fluorescent probes are essential for imaging of cancer cells and for tracking organelles inside cells. We have synthesized three molecular rotors AIN, AINP and F-AINP based on 1-aminoindole (AI) as an electron donor and naphthalimide as an electron acceptor. All compounds showed charge transfer (CT) character, aggregation induced emission (AIE) and emission responsiveness towards temperature variation and solvent viscosity. AINP was most sensitive towards viscosity among all molecules with a viscosity sensitivity of ~0.37. AIN, AINP and F-AINP showed negative temperature coefficients in chloroform with internal sensitivities of -0.04% °C ⁻¹ , -0.08% °C ⁻¹ and -0.1% °C ⁻¹ , respectively. Furthermore, all the rotors were sensitive towards the pH of the solvent environment as revealed by acid titration and base back-titration and served as colorimetric pH sensors with intriguing photophysical characteristics. Additionally, AINP and F-AINP were used to image the live cancer cell line A549 and the fibroblast cell line L929, and the imaging studies revealed the incorporation of dyes in the cytoplasmic space of the cells except for the nuclei.
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