

Supporting information

Acridinium-Based Sensor as Fluorescent Photoinduced Electron Transfer Probe for Proton Detection Modulated by Anionic Micelles

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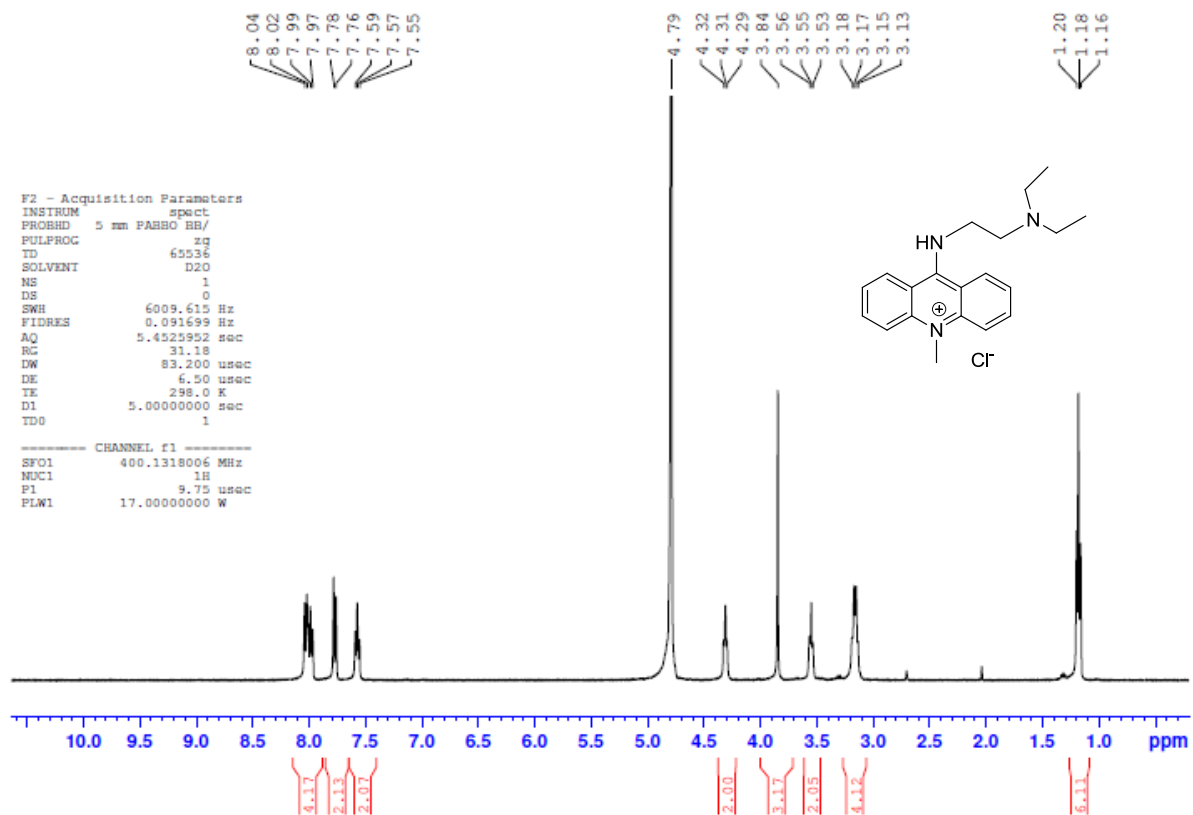
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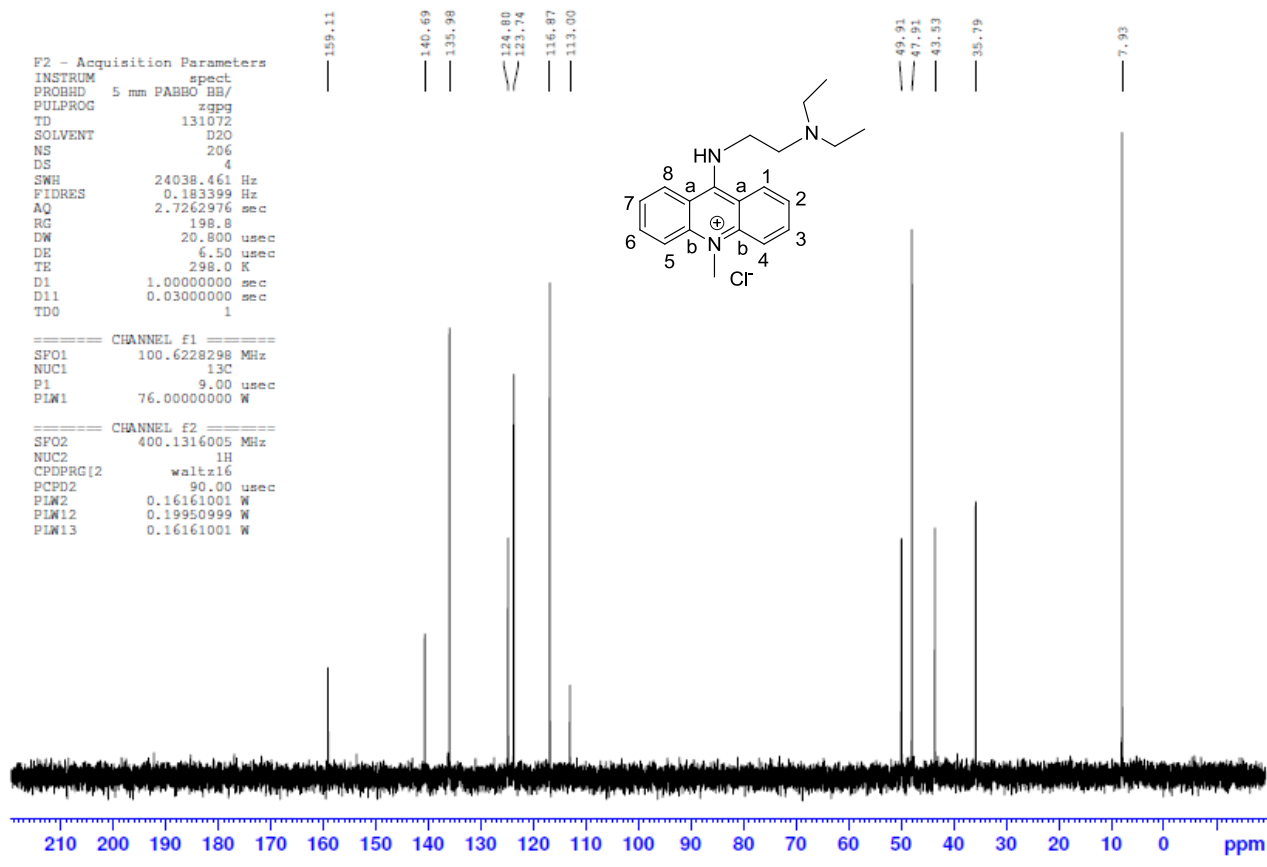
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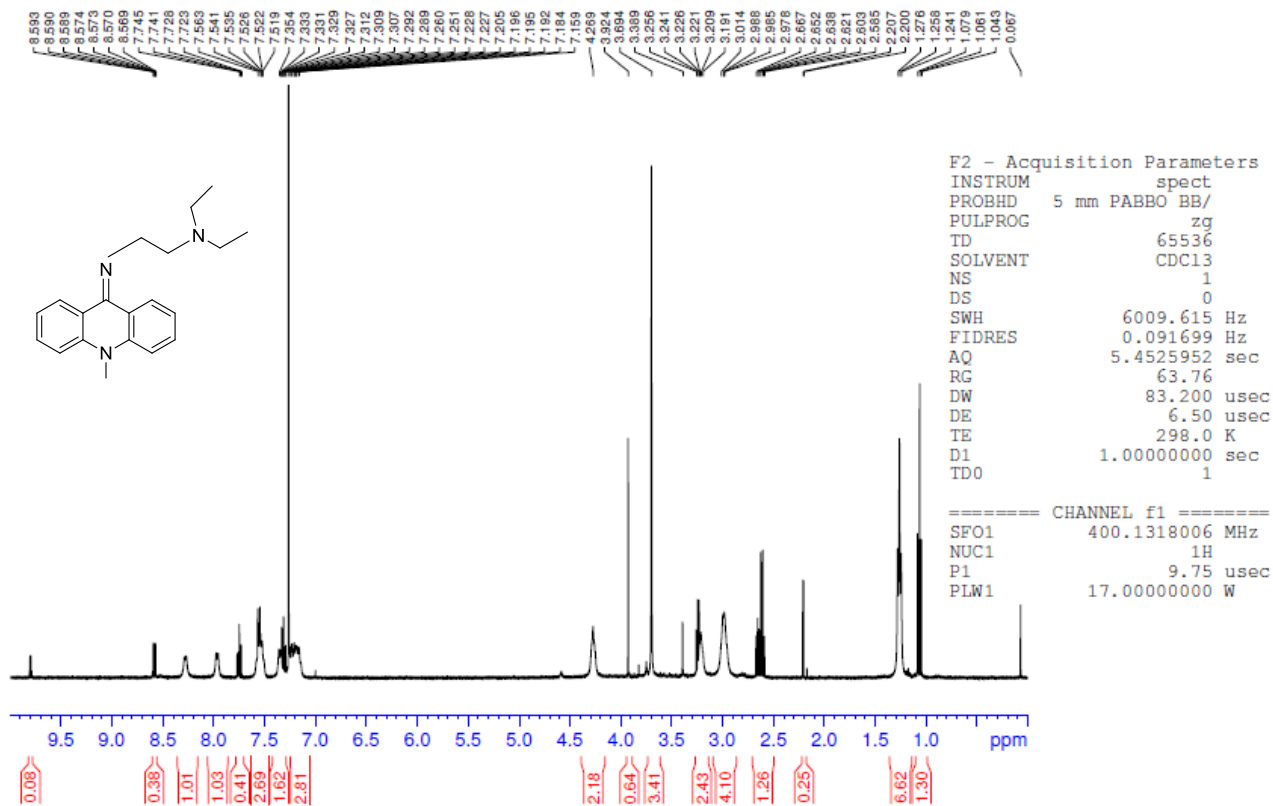
^1H and ^{13}C NMR spectra of compounds



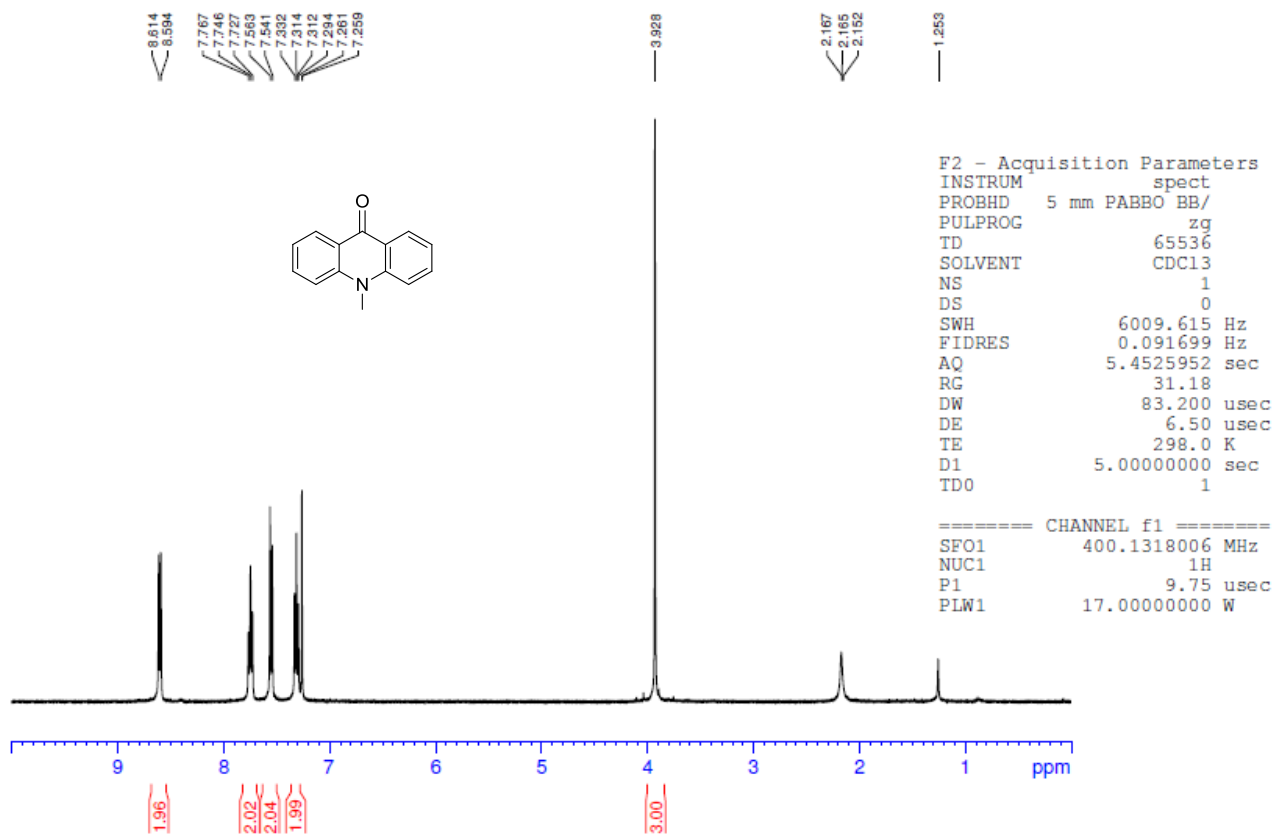
^1H NMR spectrum (D_2O , 400 MHz) of $\text{Acr}^+\text{-A Cl}^-$.



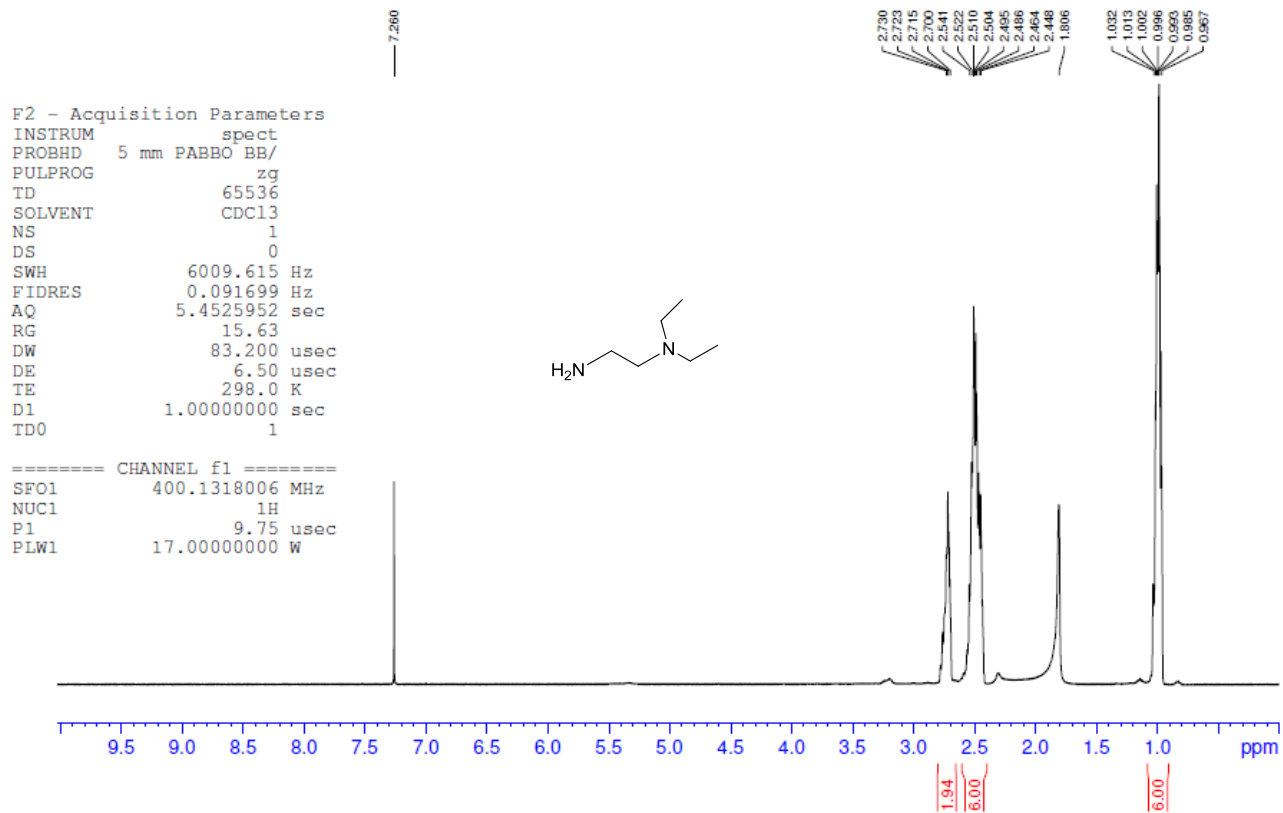
^{13}C NMR spectrum (D_2O , 400 MHz) of $\text{Acr}^+\text{-A Cl}^-$.



¹H NMR spectrum (CDCl₃, 400 MHz) of (Acr-H)-A in mixture with the corresponding hydrolysis products, identified as 10-methyl-9(10H)-acridone and [2-(diethylamino)ethyl]amine.



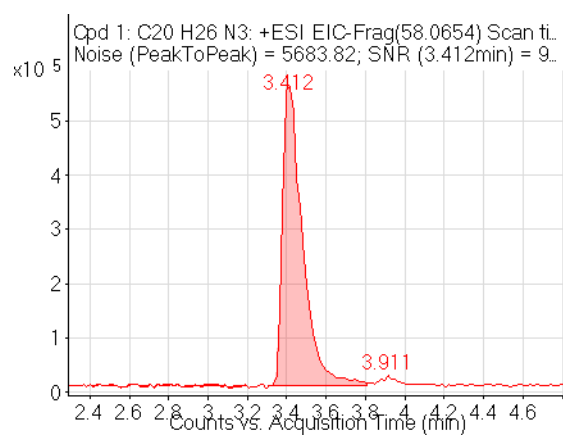
¹H NMR spectrum (CDCl₃, 400 MHz) of 10-methyl-9(10H)-acridone.



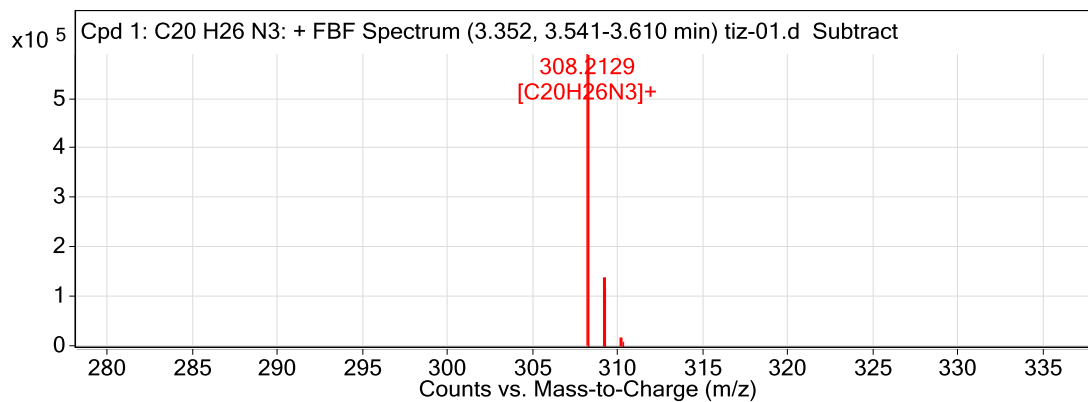
¹H NMR spectrum (CDCl₃, 400 MHz) of [2-(diethylamino)ethyl]amine.

HPLC-HRMS analysis of Acr⁺-A Cl⁻

Chromatogram:



MS spectrum:



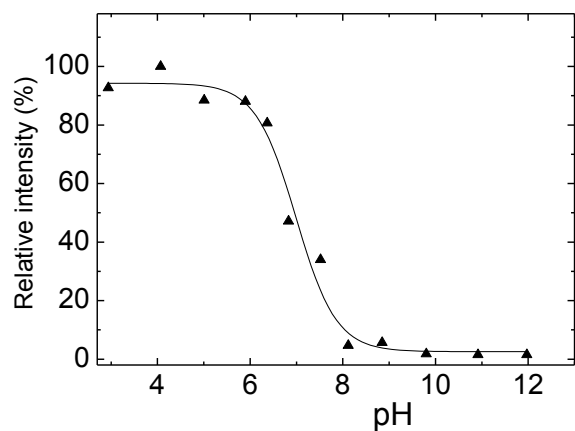


Fig. S1 Relative fluorescence emission (I_F/I_{max}) at 490 nm of Acr⁺-A (1.5×10^{-5} M) in H₂O as a function of pH. $\lambda_{exc} = 445$ nm.

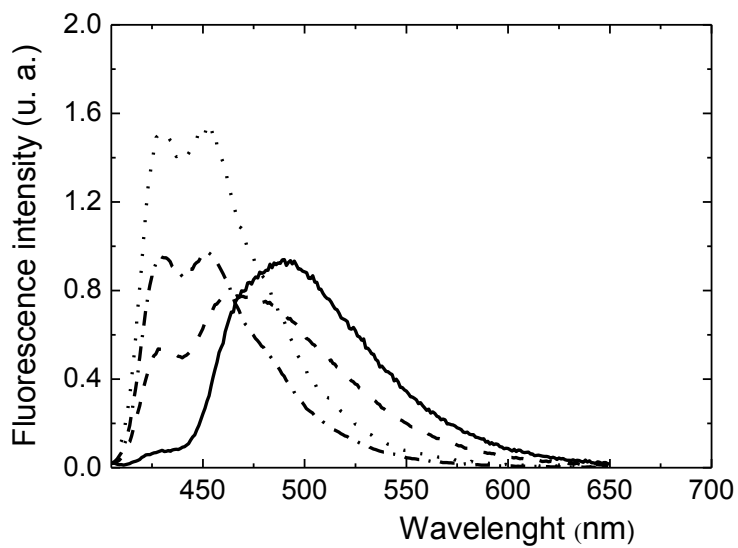


Fig. S2 Fluorescence emission spectra of Acr⁺-A (1.5×10^{-5} M) in water recorded at pH 2.91 (solid line), 6.00 (dashed line), 8.84 (dashed and dotted line) and 11.11 (dotted line), $\lambda_{exc} = 355$ nm.

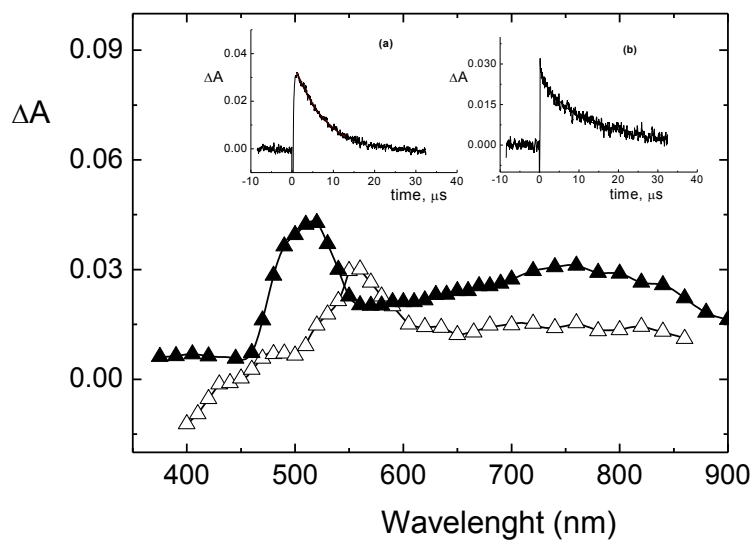


Fig. S3 Absorption spectra of Acr⁺-A (5.5×10^{-4} M) in N₂-saturated H₂O recorded 1.1 μs after the laser pulse at pH 8.0 (▲) and 12.0 (△); $\lambda_{\text{exc}} = 355$ nm. Inset: decays recorded at 510 (a) and 750 nm (b) in N₂-saturated solution at pH 8.0.

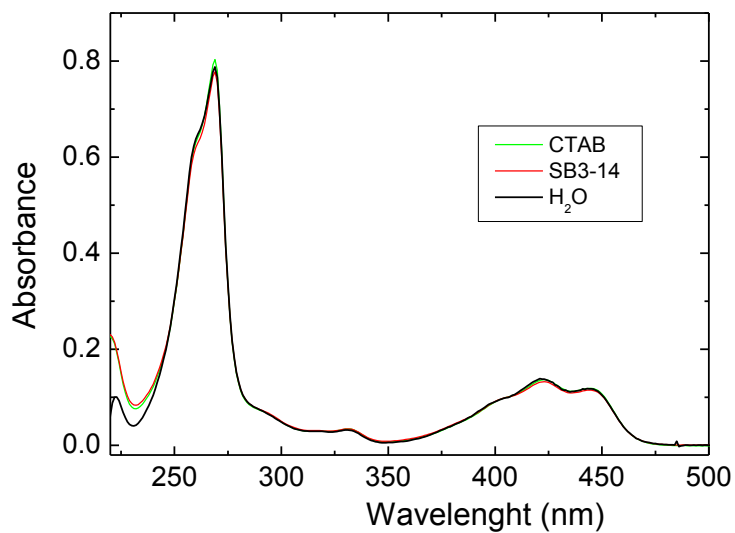


Fig. S4 Absorption spectra of Acr⁺-A (1.6×10^{-5} M) at pH 5.90 recorded in H₂O, 0.01 M CTAB and 0.01 M SB3-14.

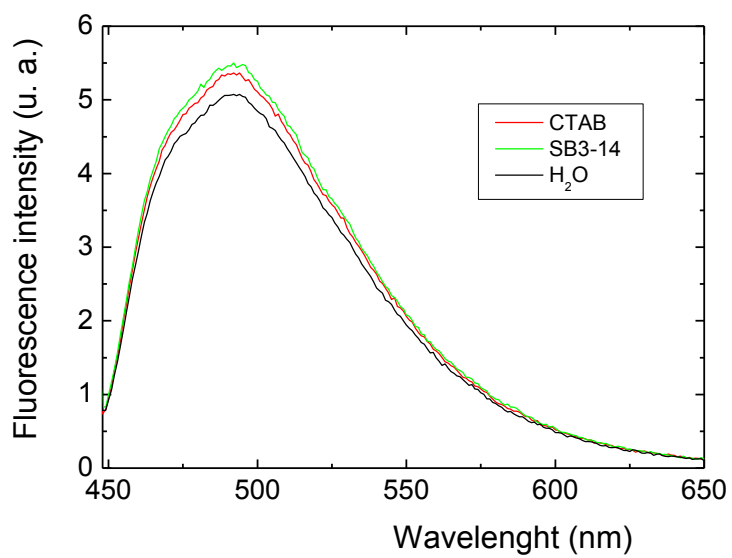


Fig. S5 Fluorescence spectra of Acr⁺-A (1.6×10^{-6} M) at pH 5.90 recorded in H₂O, 0.01 M CTAB and 0.01 M SB3-14; $\lambda_{\text{exc}} = 445$ nm.

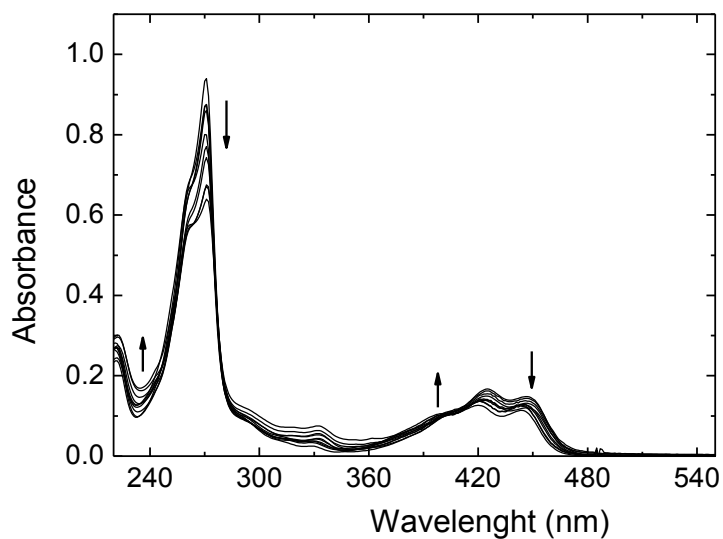


Fig. S6 Absorption spectra of Acr⁺-A (1.6×10^{-5} M) recorded in 0.01 M SDS at different pH values (2.96÷11.23); the arrows are in the direction of decreasing pH.

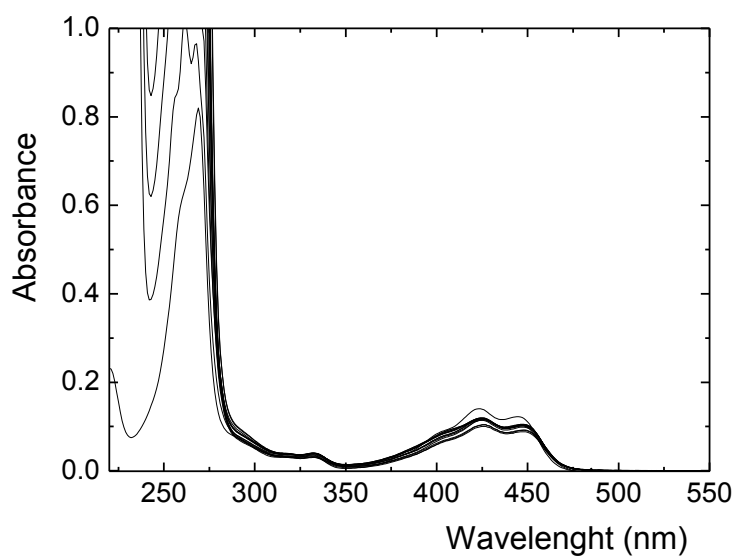


Fig. S7 Absorption spectra of Acr⁺-A (1.6×10^{-5} M) recorded in 0.02 M SOBS at different pH values (2.79-11.80).

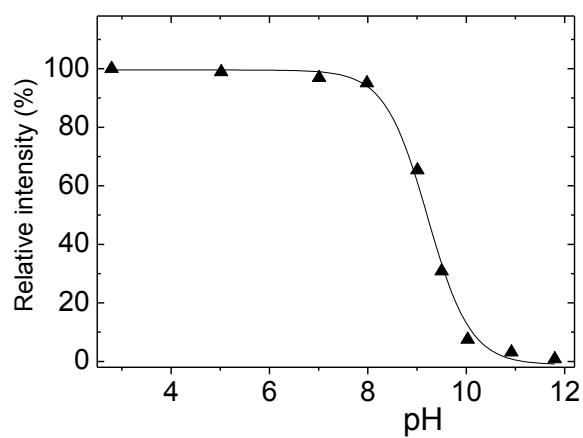


Fig. S8 Relative fluorescence emission (I_F/I_{\max}) at 490 nm of Acr⁺-A (1.5×10^{-5} M) in the presence of SDS (0.01 M) as a function of pH. λ_{exc} = 445 nm.

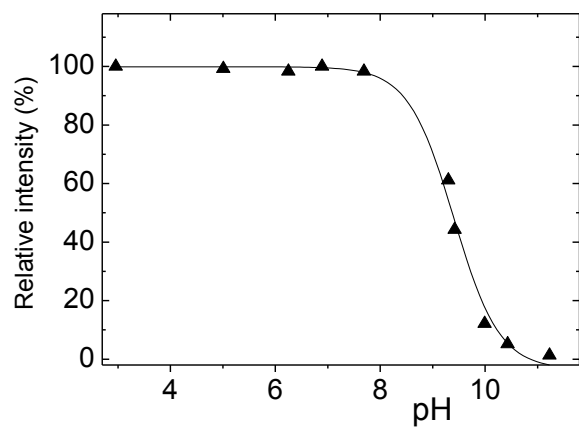


Fig. S9 Relative fluorescence emission (I_f/I_{max}) at 490 nm of Acr⁺-A (1.5×10^{-5} M) in the presence of SOBS (0.02 M) as a function of pH. λ_{exc} = 445 nm.