Electronic Supplementary Material (ESI) for Analytical Methods
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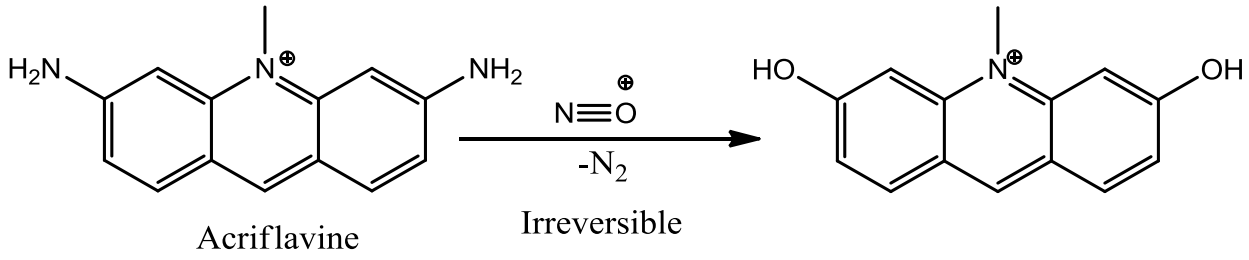
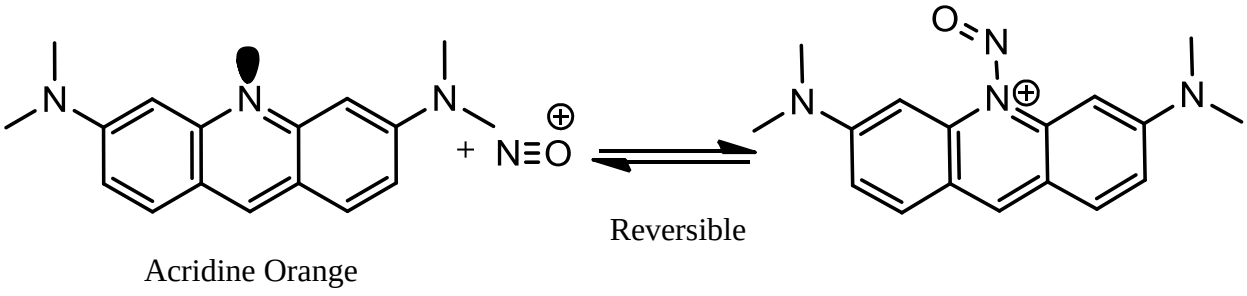
**Supporting Information:**

# Photophysical Effects of Nitric Oxide and S-Nitrosocysteine on Acridine Orange: Use as Sequential Sensing Platform for NO, Cysteine, Cysteine-NO and $Hg^{2+}$ under Physiological Condition

**Kallol Bera, Barun Kumar Maity, Moupriya Nag, Manjur Oyasim Akram and Soumen Basak***




**Scheme S1:** Mode of Reaction of NO with Acriflavine and Acridine Orange

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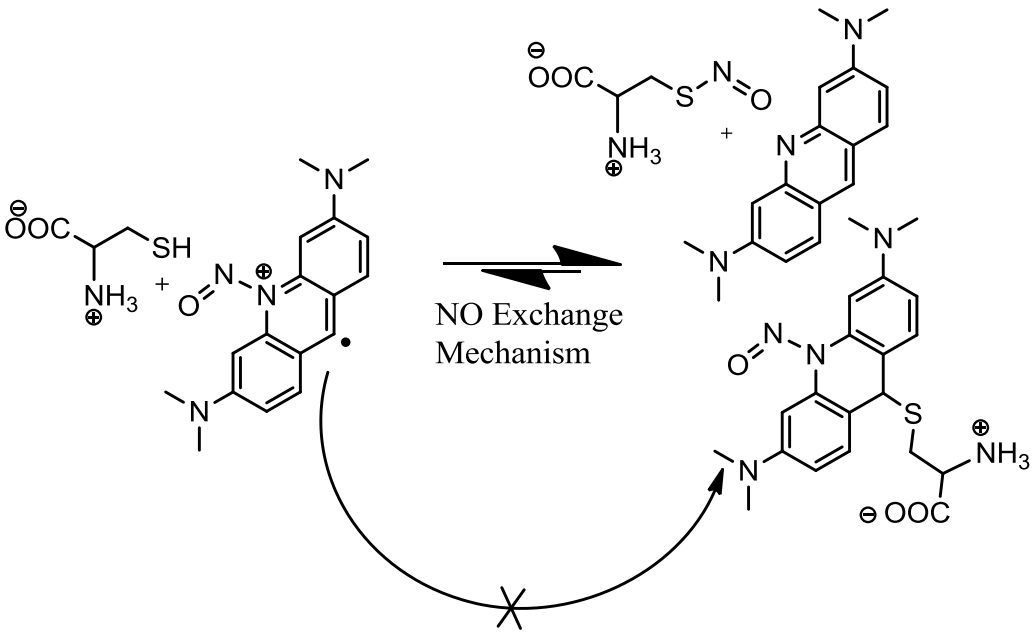
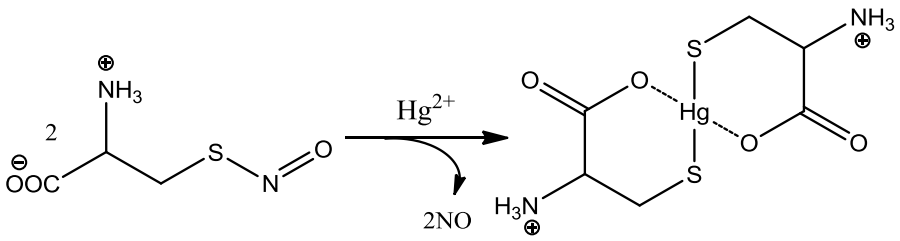



**Scheme S2:** A plausible NO exchange mechanism.




**Scheme S3:** Formation of $Hg^{2+}$-Cysteine complex

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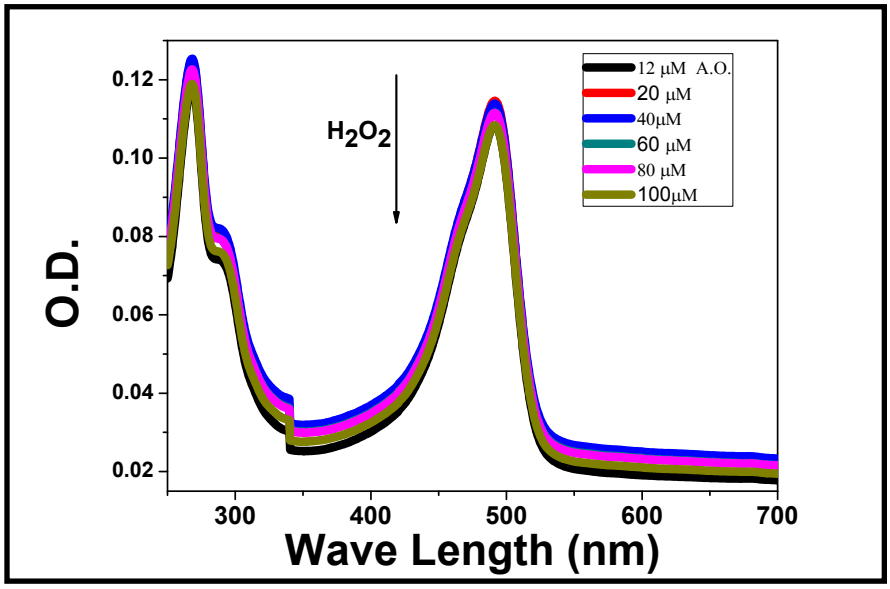


**Figure S1:** Titration of AO (12 µM) with increasing concentration of $H_2O_2$ (20-100 µM).

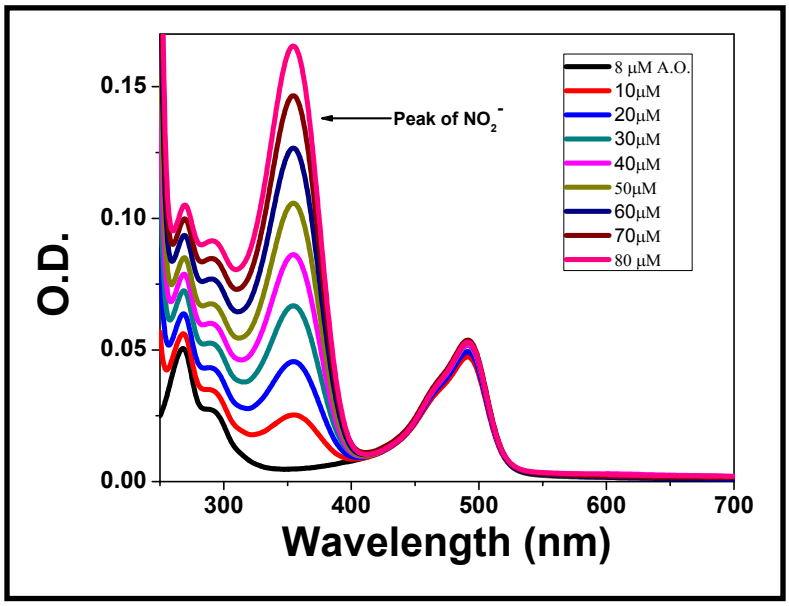


**Figure S2:** Titration of AO (8 µM) with increasing concentration $NO_2^-$ (10-80 µM).

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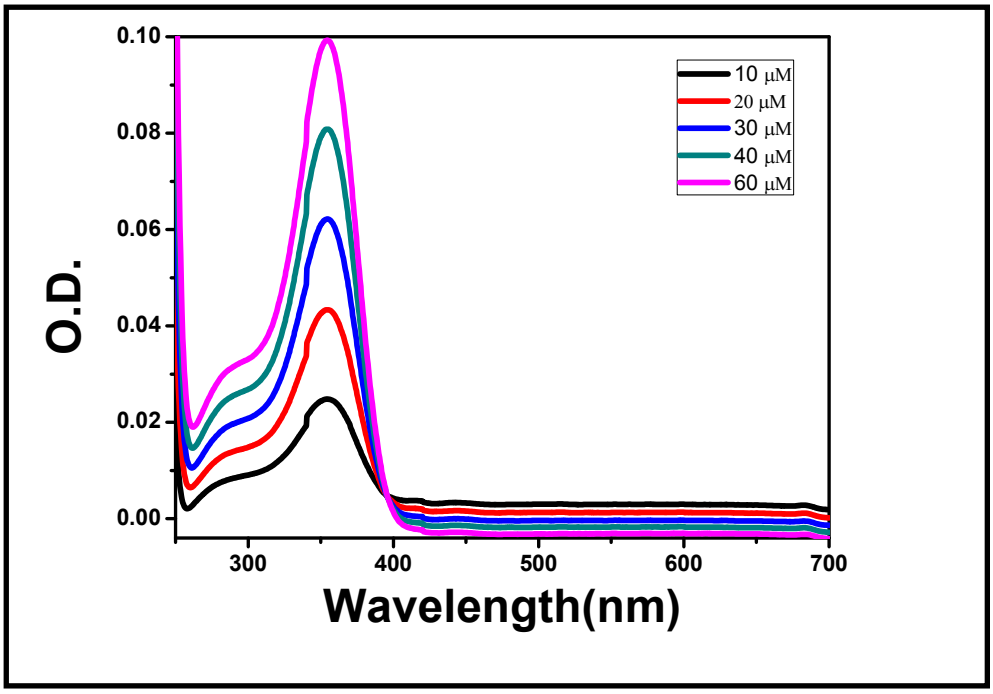


**Figure S3:** Absorption spectra of only $NO_2^-$ (10-60 µM) in distilled water.

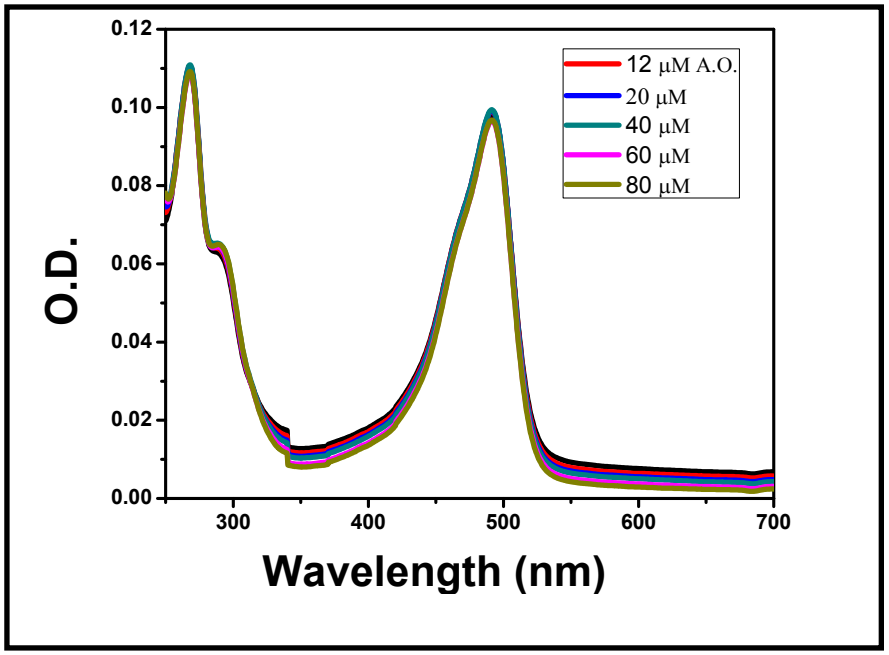


**Figure S4:** Titration of AO (12 µM) with increasing concentration $NO_3^-$ (20-80 µM).

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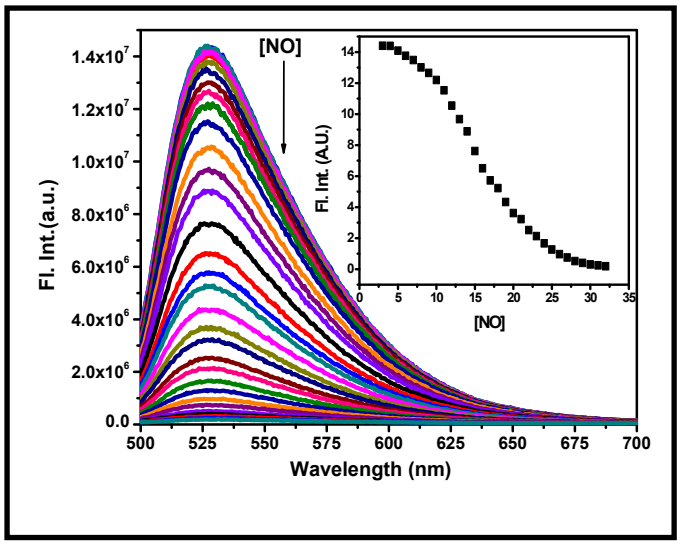


**Figure S5.** Fluorescence spectra of AO (10 µM) in presence of increasing concentration of NO (0-32 µM) in PBS at pH 7.2 at $25^0$C. Inset: Plot of fluorescence intensity at 527 nm vs number of equivalents of NO.

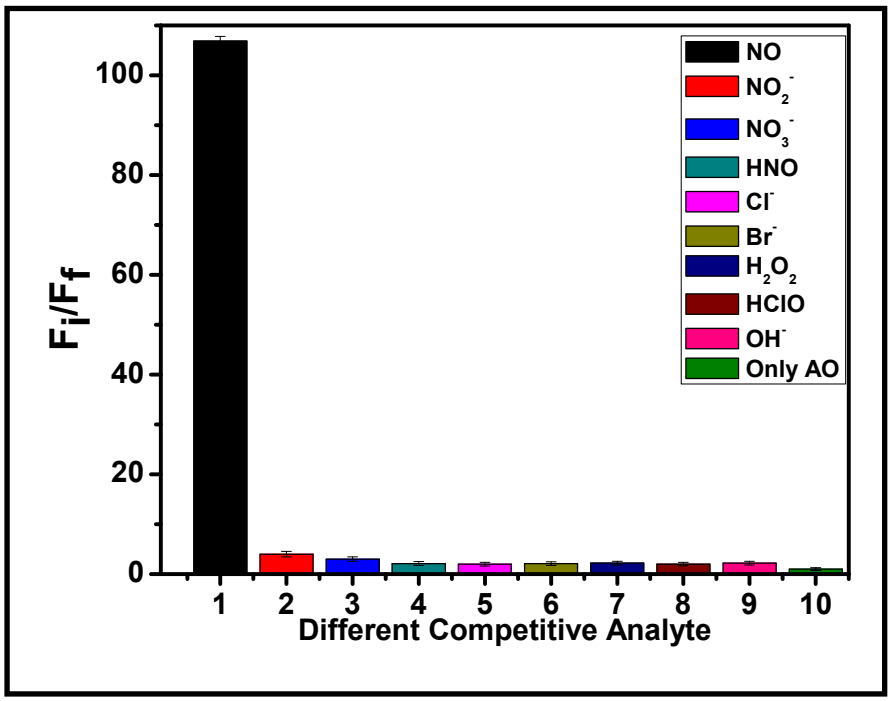


**Figure S6:** Relative decrease in fluorescence response at 527 nm (excitation at 491 nm) of AO (10 µM) in water in presence of 40 µM each of NO (1), $NO_2^-$ (2), $NO_3^-$ (3), HNO (4), $OH^-$ (5), $Cl^-$ (6), $Br^-$ (7), $H_2O_2$ (8), $ClO^-$ (9), AO only (10).

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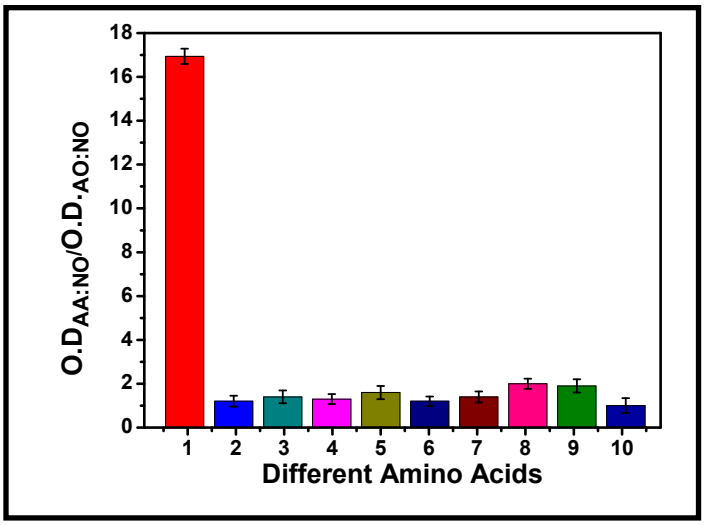


**Figure S7 :** (b) Relative change in O.D. (at 336 nm) of AO:NO (10:32 µM) in pure water in presence of 40 µM each of cysteine (1), glycine (2), aspartic acid (3), lysine (4), histamine (5), alanine (6), phenyle alanine (7), tyrosine (8), tryptophan (9) and 10:24 µM AO:NO (10).

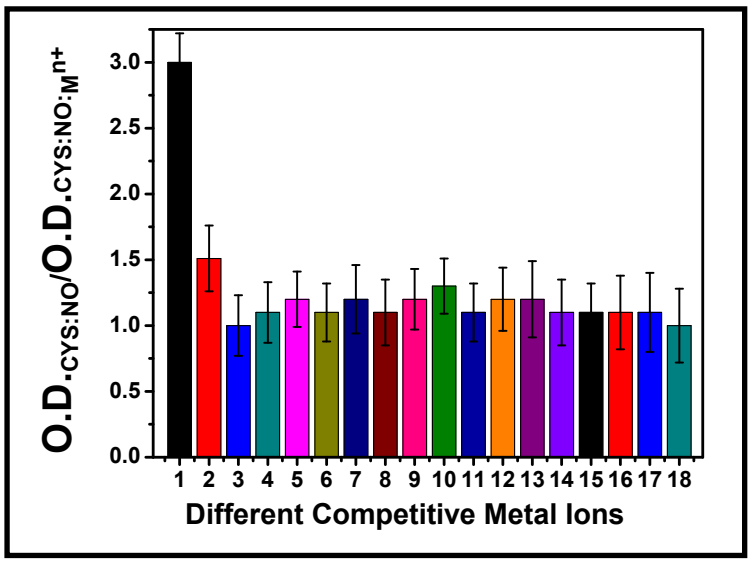


**Figure S8:** Relative decrease in O.D. (at 335 nm) of AO:Cys:NO (10:40:32 µM) in water in presence of 16 µM of $Hg^{2+}$ (1), $Cu^{2+}$ (2), $Zn^{2+}$ (3), $Ag^{+}$ (4), $Pb^{2+}$ (5), $Cd^{2+}$ (6), $Ni^{2+}$ (7), $Co^{2+}$ (8), $Fe^{2+}$ (9), $Mn^{2+}$ (10), $Mg^{2+}$ (11), $Ca^{2+}$ (12), $Ba^{2+}$ (13), $Li^{+}$ (14), $K^{+}$ (15), $Na^{+}$ (16), $Cr^{2+}$ (17) and Cys-NO (18).