

Supporting Information

Visual Detection of Cysteine and Homocysteine

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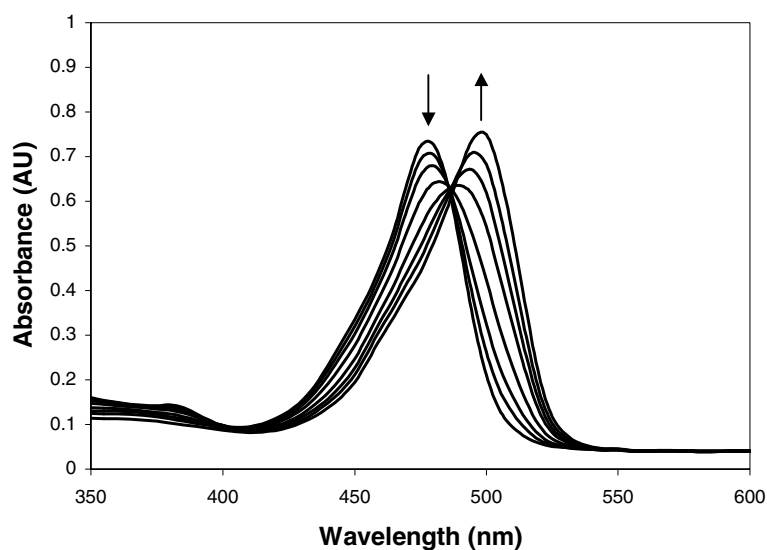


Figure S1. UV-Vis spectra of **1** ($2.5 \times 10^{-6} M$) and L-cysteine ($4 \times 10^{-6} M - 8 \times 10^{-5} M$) in H_2O , pH 9.5 at room temperature. Each spectrum was acquired after 5 min. As the concentration of L-cysteine increases, a red shift from 480 nm to 505 nm is observed.

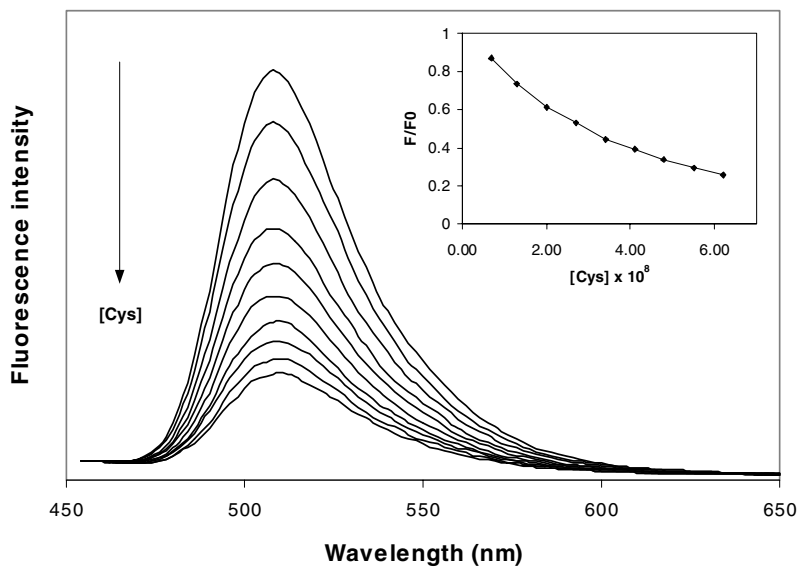


Figure S2. Fluorescence emission spectra of solutions of **1** ($1.0 \times 10^{-8} M$) and L-cysteine excited at 460 nm in H_2O , pH 9.5 at room temperature. Inset: F0 represents the maximum fluorescence intensity in the absence of analyte and F represents the corresponding intensity in the presence of analyte.

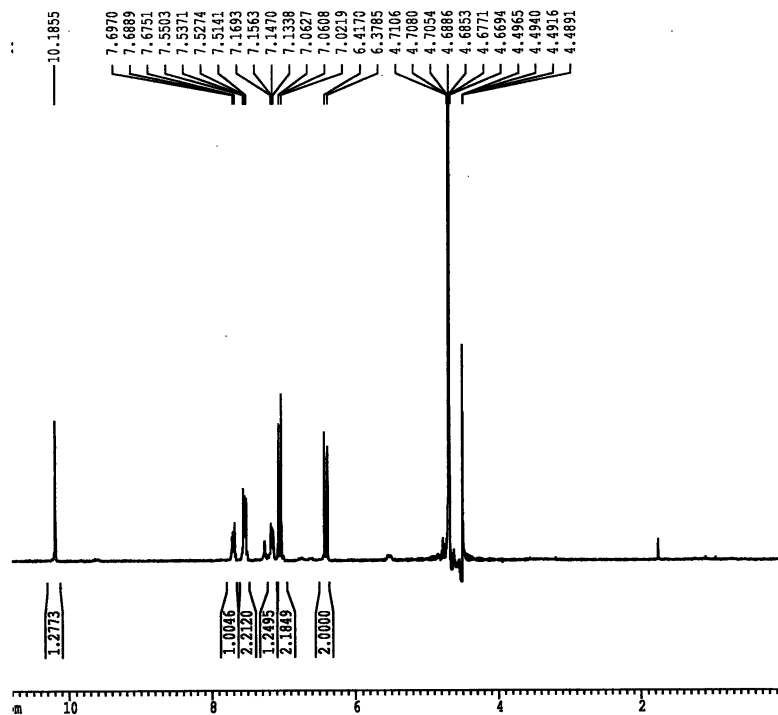


Figure S3. $^1\text{H-NMR}$ spectrum of fluorescein dialdehyde **1** (D_2O).

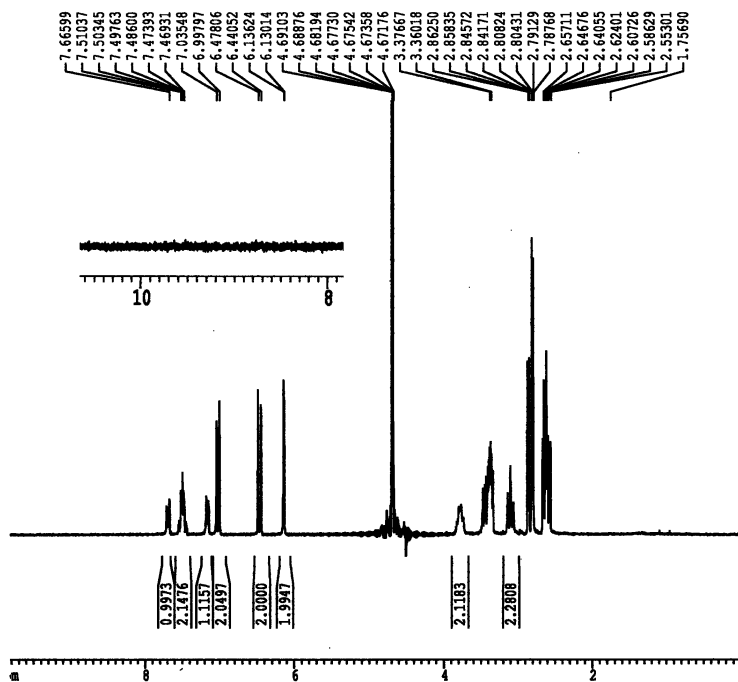


Figure S4. $^1\text{H-NMR}$ spectrum of cysteine-derived thiazolidine **3a** (D_2O) in the presence of excess (15 equiv) **2a** showing complete conversion to bis-thiazolidine (see also text footnote 11).

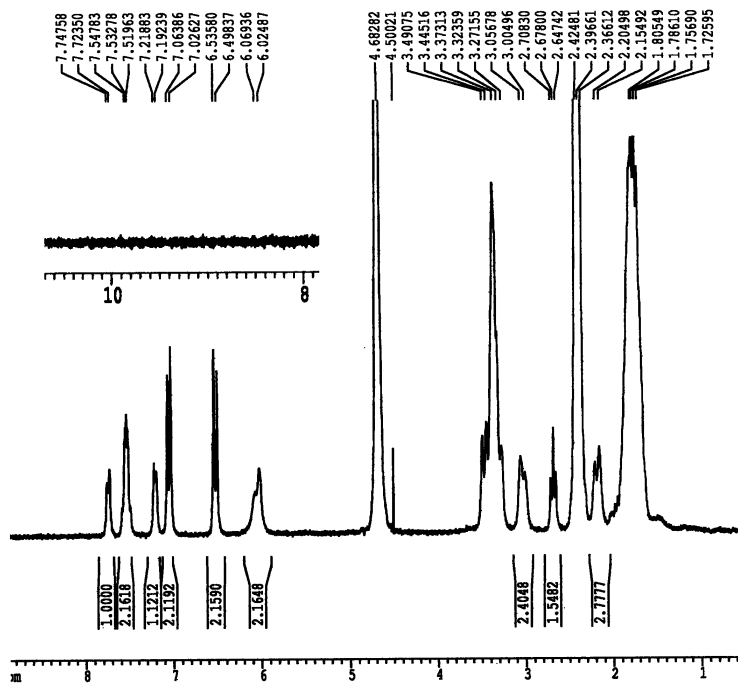


Figure S5. ¹H-NMR spectrum of homocysteine-derived thiazolidine **3b** (D₂O) in the presence of excess (15 equiv) **2b** showing complete conversion to bis-thiazolidine (see also text footnote 11).

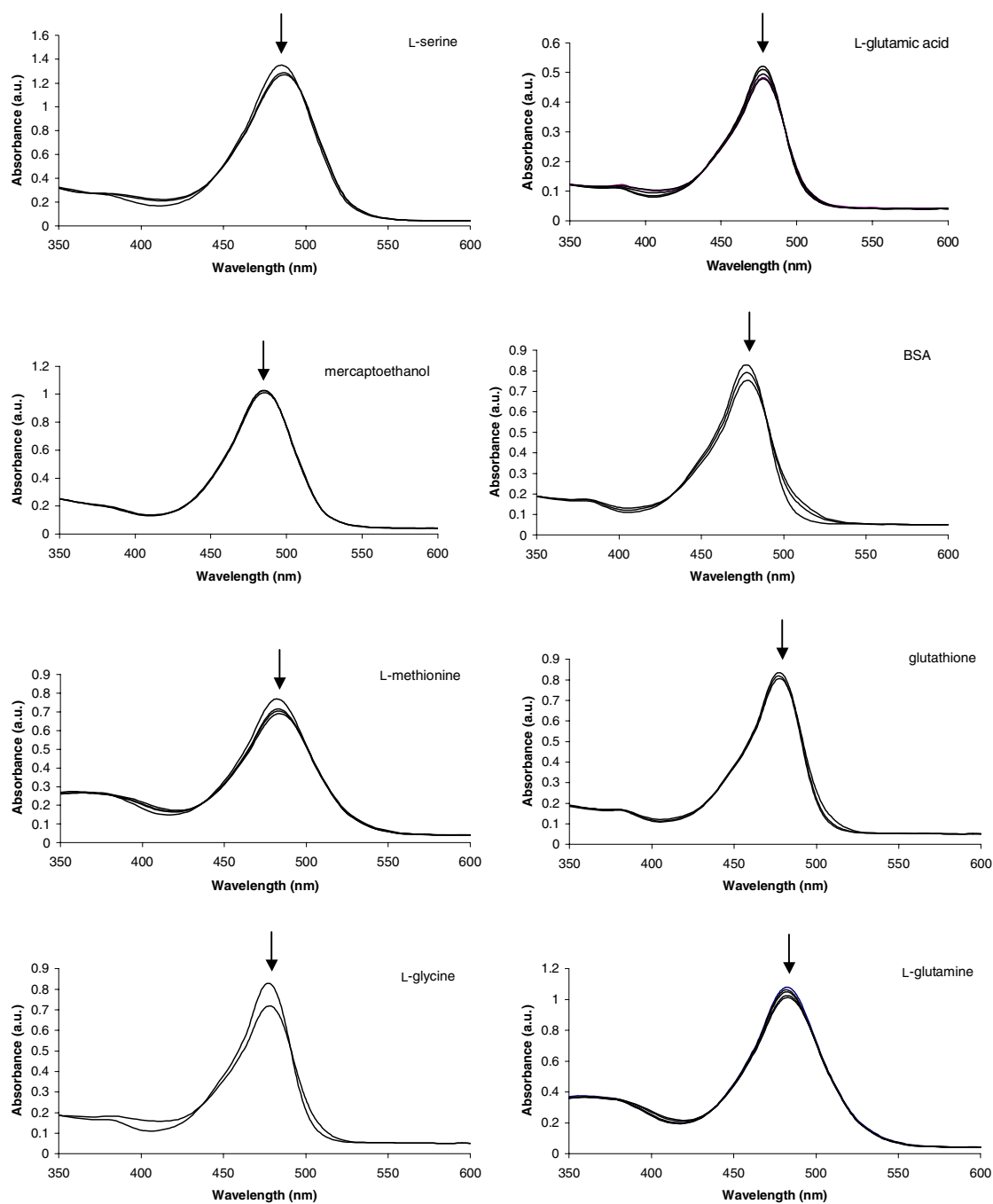


Figure S6. UV-Vis spectra **1** (2.5×10^{-6} - 6.5×10^{-6} M) in water and with various analytes (analyte concentrations are shown to a maximum of 8.0×10^{-4} M in 0.1 M carbonate buffer pH 9.5). These results indicate that even at an order of magnitude higher final concentrations than cysteine (8.0×10^{-5} M), these analytes promote significantly weaker absorbance changes in solutions of **1** (compare to Figure S1).