Supporting data

Development of a Low-Cost UV-Vis Spectrophotometer and its Application for the Detection of Mercuric Ions Assisted by Chemosensors

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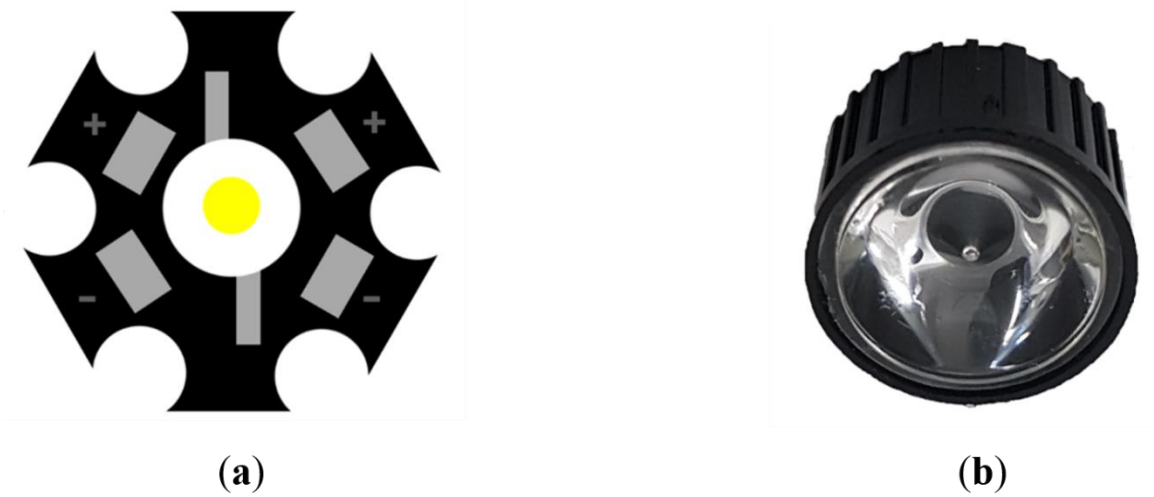


Figure 1. a) 1W used white LED. b) 5° collimator lens.

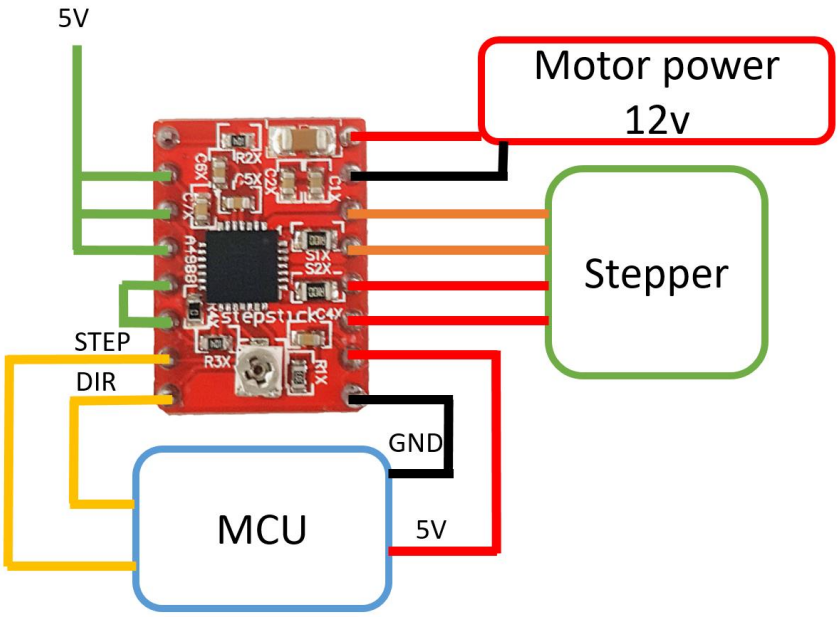
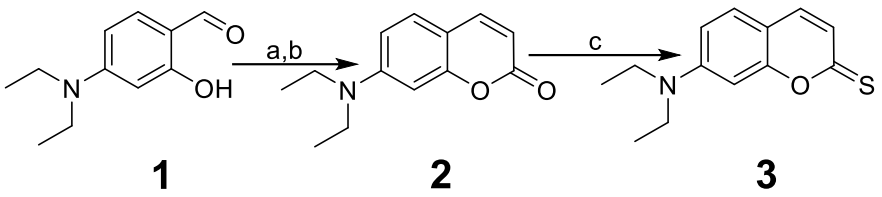


Figure S2. a4988 driver in microstepping configuration.



Scheme S1. Synthetic route to 7-(diethylamino)-2 -chromene-2-thione (**3**). Reagents and conditions: a) Diethyl malonate, piperidine, reflux, 6h; b) HCl, AcOH, reflux, 24 h; c) Lawesson Reagent, Toluene, Reflux, 3 h.

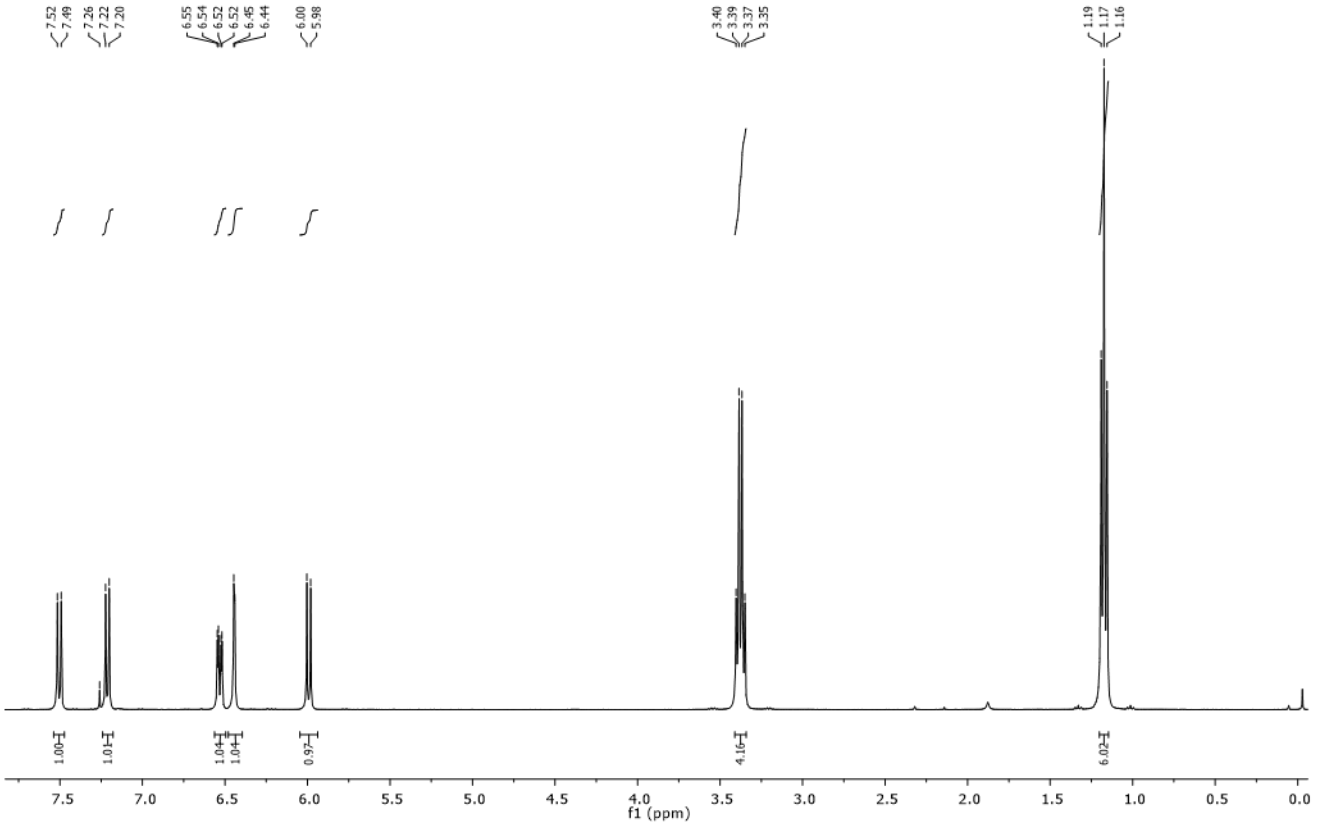


Figure S3. ^{1}H NMR (DMSO-d_6) spectrum of 7-(diethylamino)-2*H*-chromen-2-one (**2**).

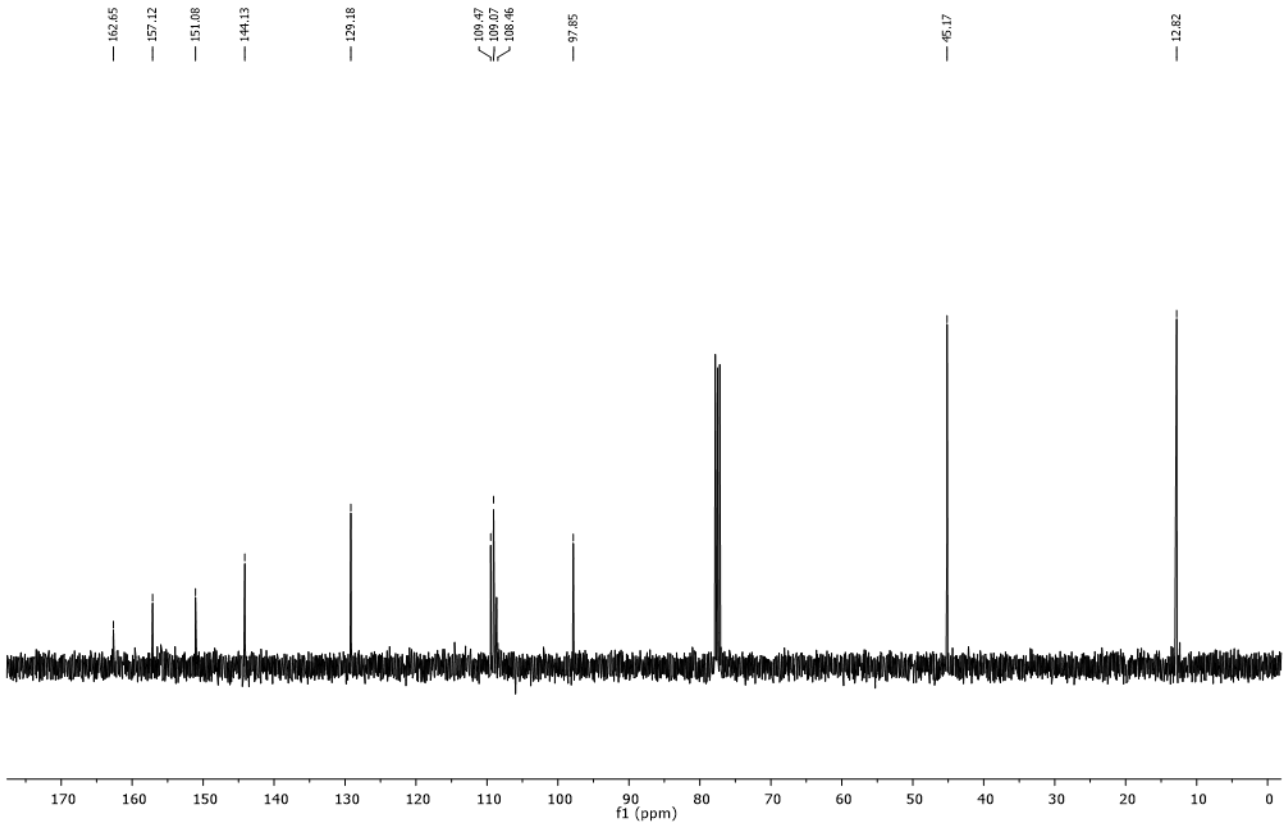


Figure S4. ^{13}C NMR (DMSO-d_6) spectrum of 7-(diethylamino)-2*H*-chromen-2-one (**2**).

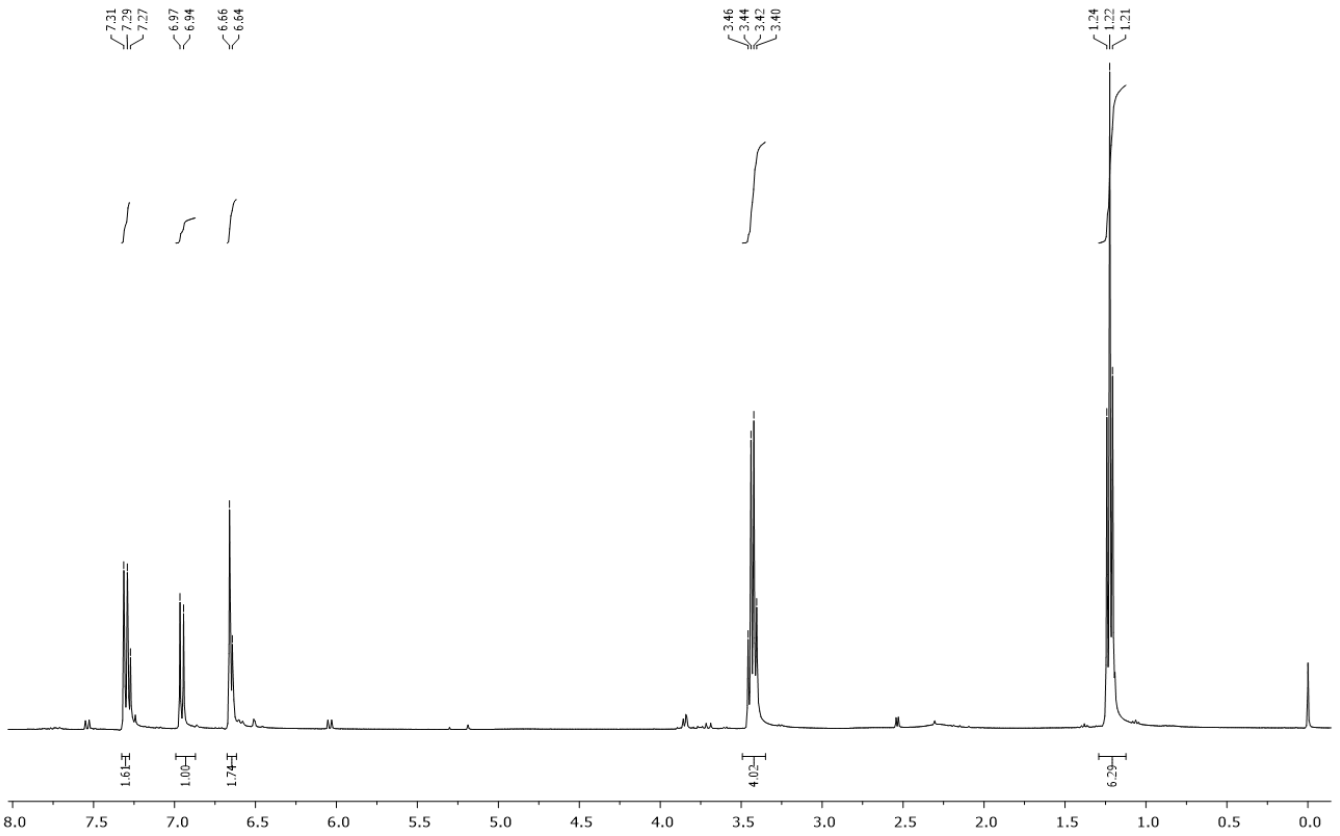


Figure S5. ^{1}H NMR (DMSO-d_6) spectrum of 7-(diethylamino)-2*H*-chromene-2-thione (**3**).

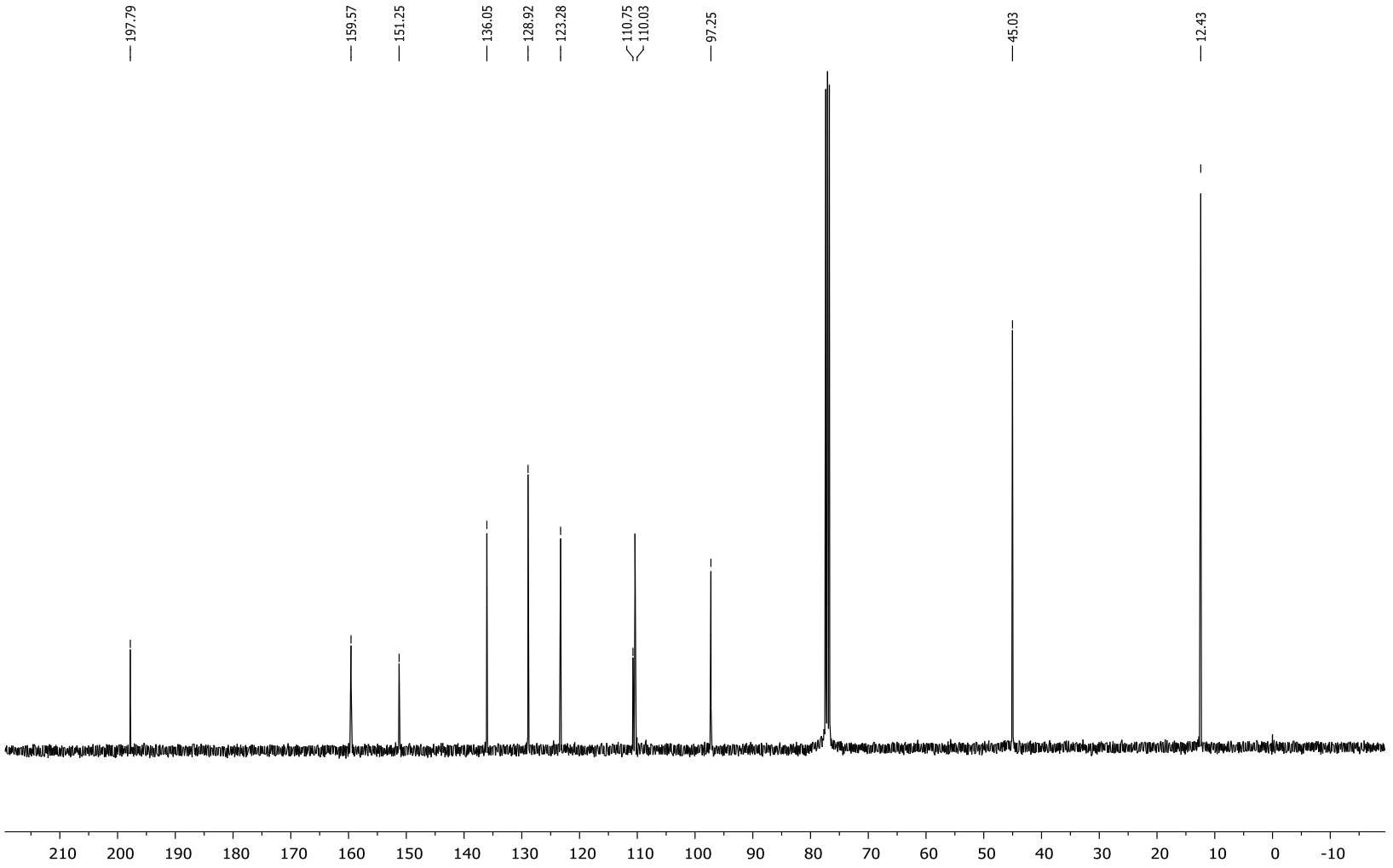


Figure S6. ^{13}C NMR (DMSO-d6) spectrum of 7-(dietilamino)-2*H*-cromeno-2-tiona (**3).**

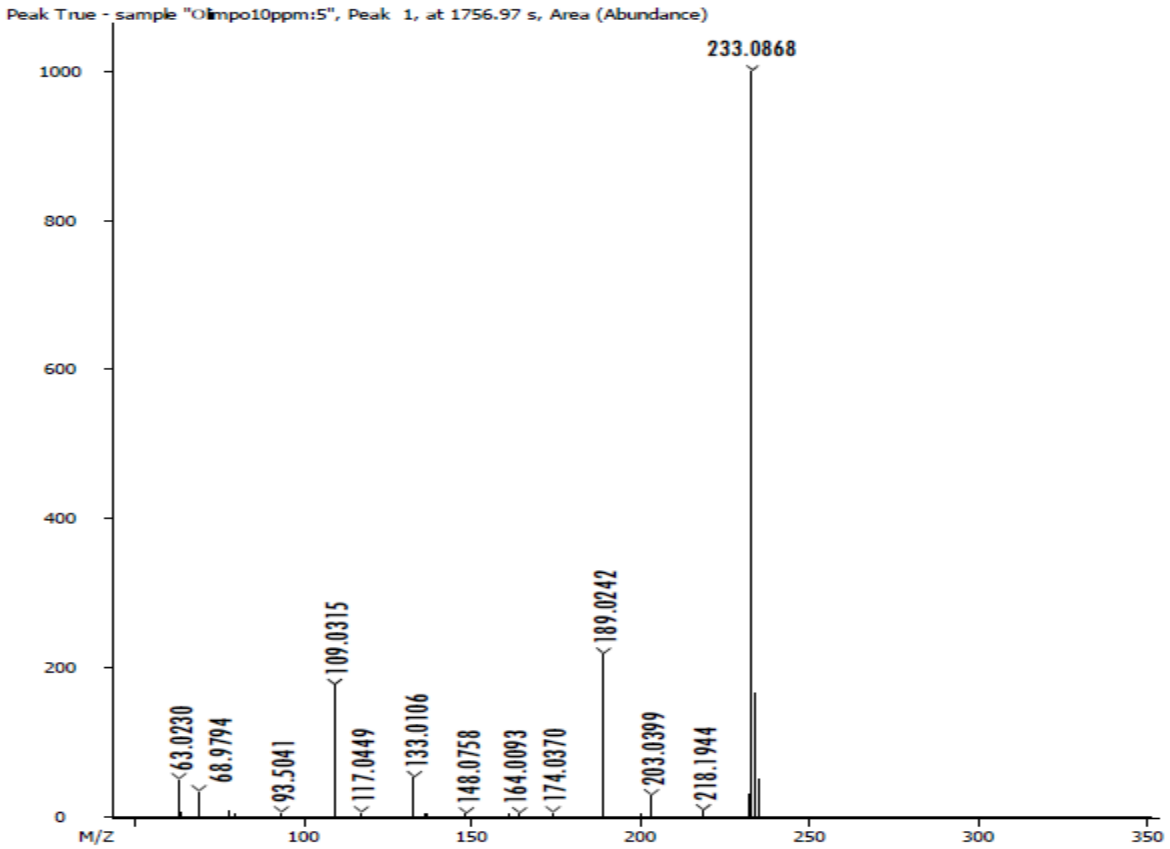


Figure S7. HRMS of 7-(dietilamino)-2*H*-cromeno-2-tiona (**3**).

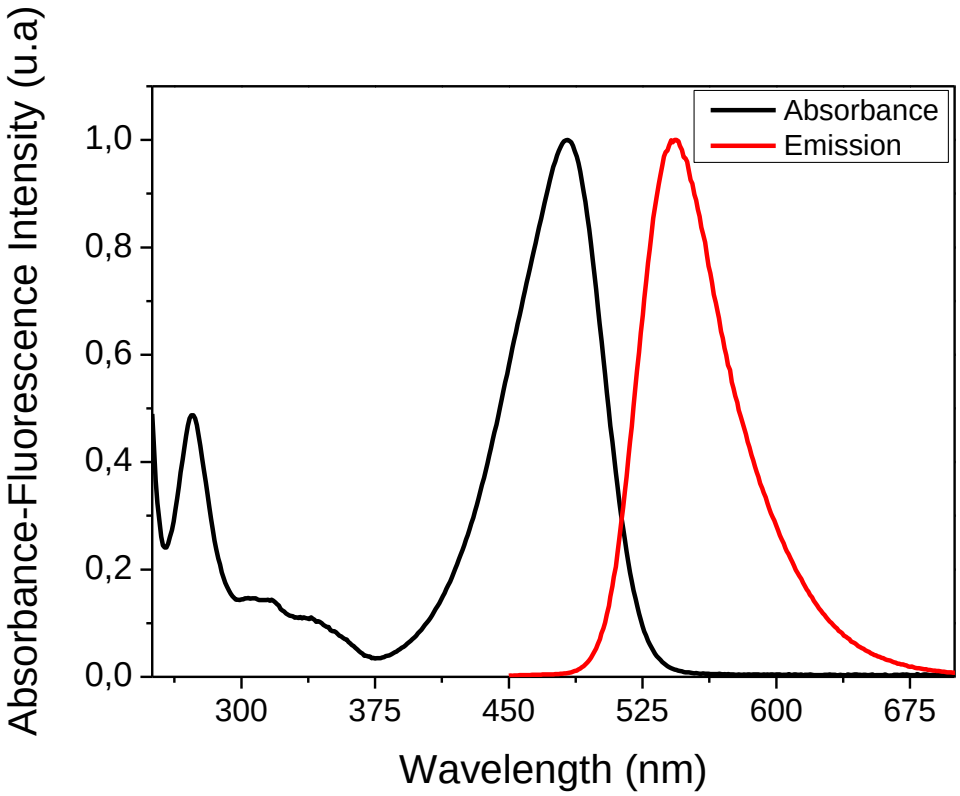


Figure S8. UV-Vis and emission spectra of **3**.

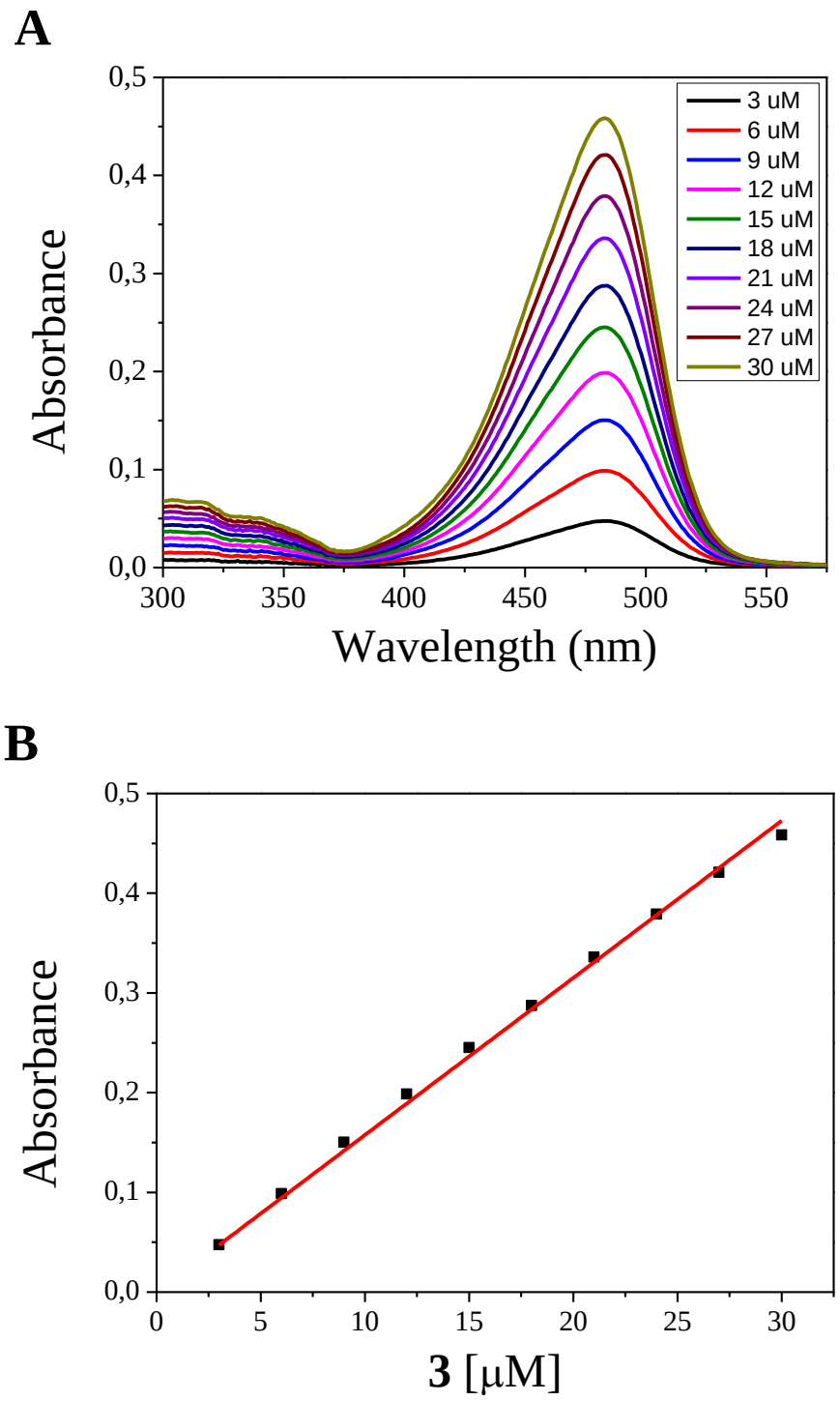


Figure S9. (A) UV-Vis spectra of **3** at different concentration; (B) Plot of absorbance of chemosensor **3** against its concentration from 3 to 30 μM.

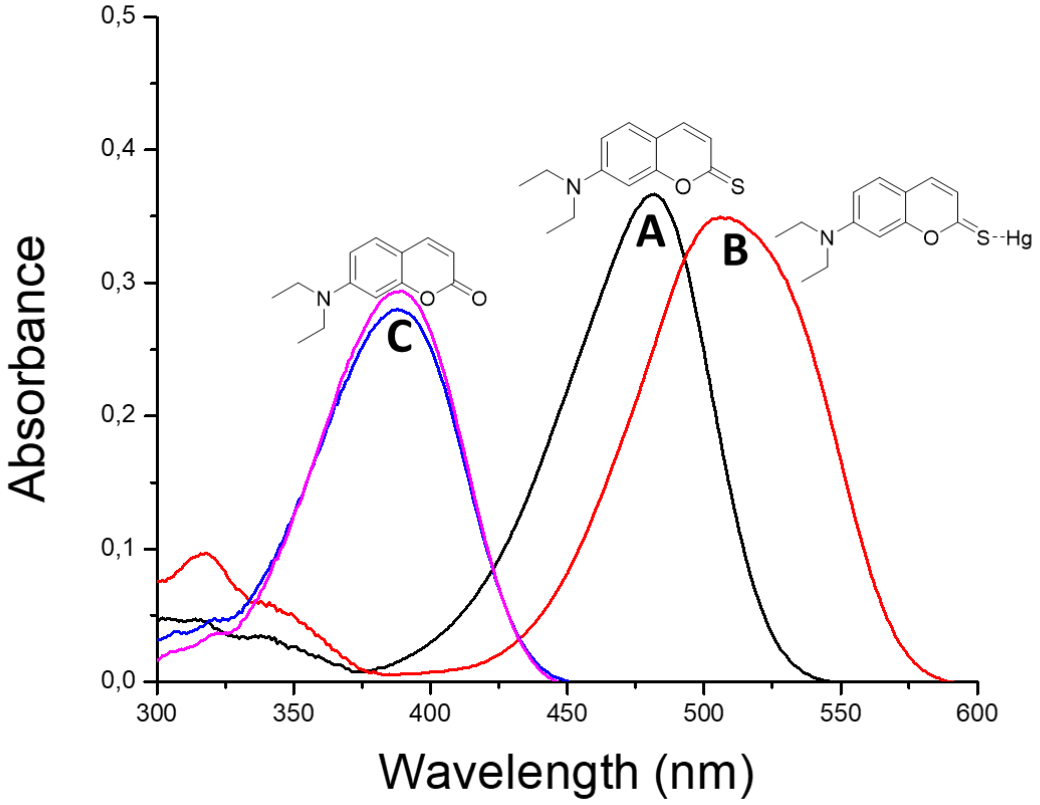


Figure S10. (A) UV-Vis spectra of **3**; (B) UV-Vis spectra of **3**-Hg; (C) UV-Vis spectra of **2.**

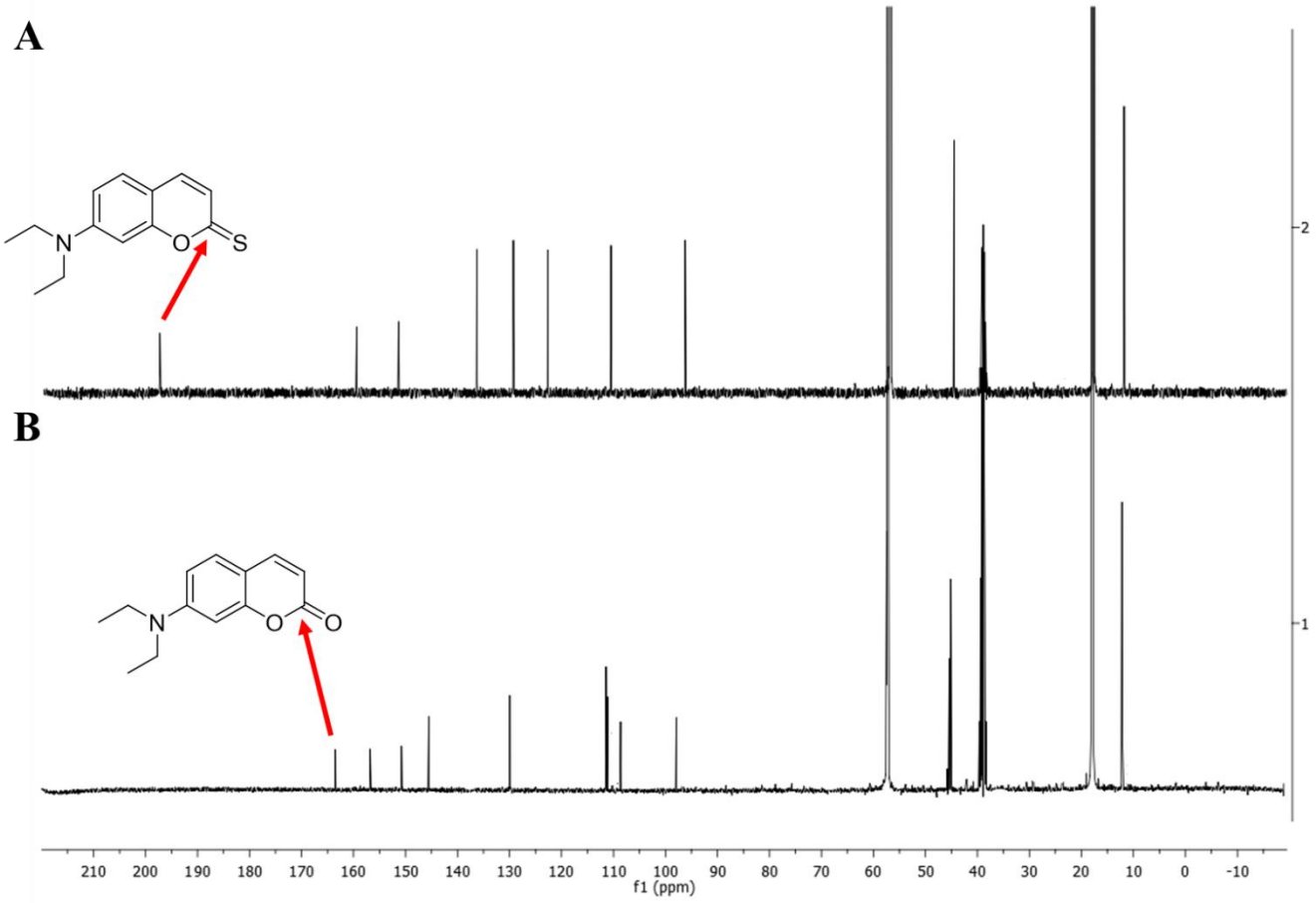


Figure S11. ^{13}C NMR (DMSO-d_6) spectrum of chemosensor **3** alone (**A**) and in the presence of mercuric ions (**B**).