Electronic Supplementary Information

Highly selective fluorescent probe for detection and visualization of palladium ions in mixed aqueous media

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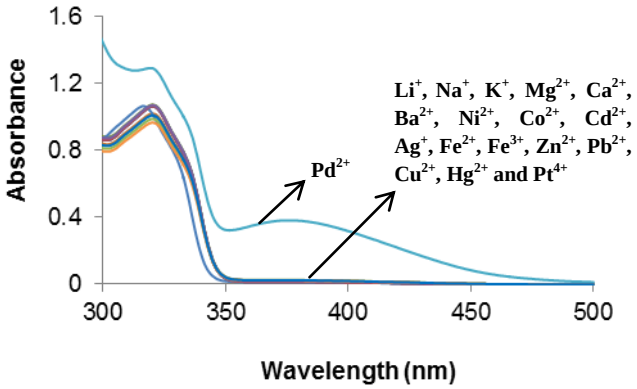


Figure S1 UV-vis spectra of **1** (5 μM) in H_2O:CH_3CN (1:1, v/v) buffered with HEPES, pH = 7.2; in the presence of various metal ions (50 equiv each).

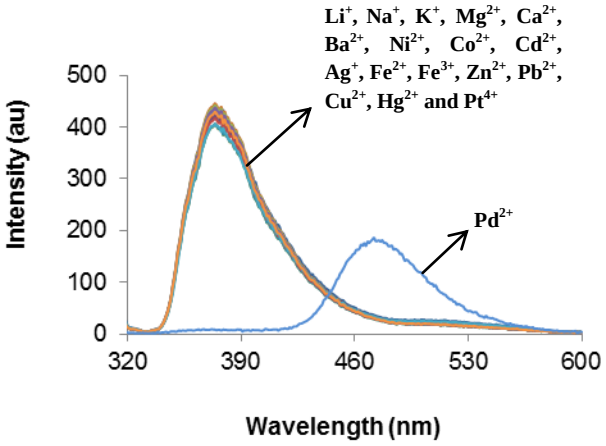


Figure S2 Fluorescence response of **1** (5 μM) in H_2O:CH_3CN (1:1, v/v) buffered with HEPES, pH = 7.2; at 25 °C; λ_{ex} = 310 nm in the presence different of metal ions (50 equiv each). Data were given after 3 hour with the appropriate metal ions at 25 °C.

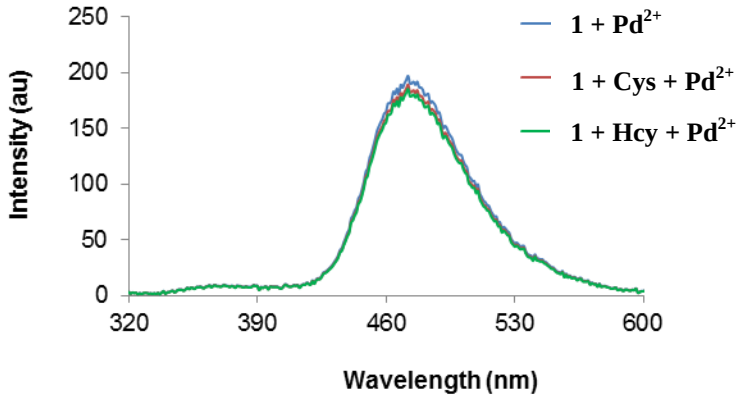


Figure S3 Fluorescence response of **1** (5 μM) in H_2O:CH_3CN (1:1, v/v) buffered with HEPES, pH = 7.2; at 25 °C; λ_{ex} = 310 nm with Pd^{2+} ions (50 equiv) in the presence of Cys and Hcy (50 equiv each). Data were given after 3 hour with the appropriate analyte.

Calculations for detection limit:

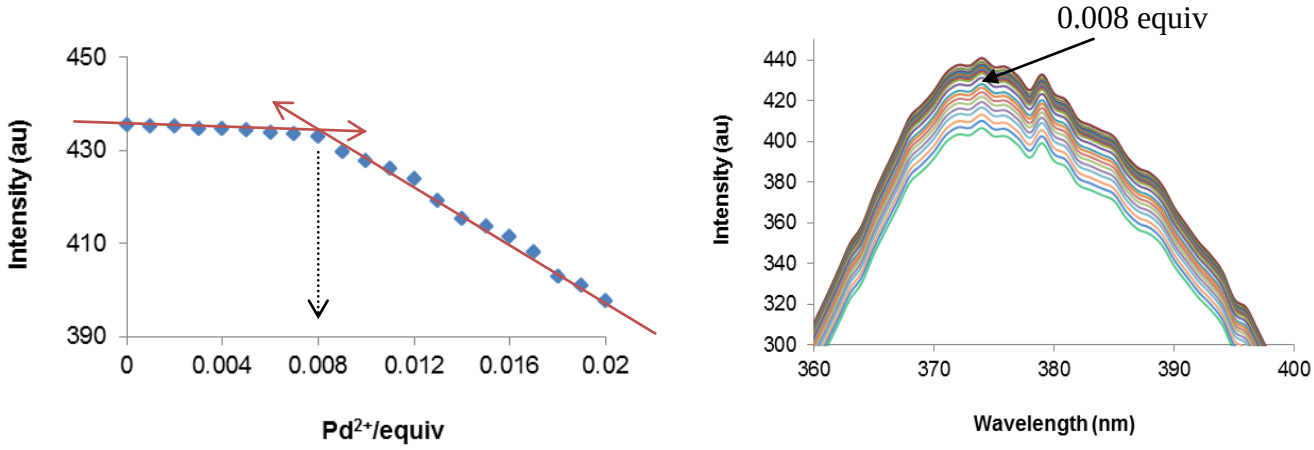


Figure S5 Figure showing the fluorescence intensity at 372 nm as a function of Pd^{2+} ions concentration.

To determine the detection limit,[1] fluorescence titration of compound **1** with palladium ions was carried out by adding aliquots of palladium solution of minimum concentration and the fluorescence intensity as a function of Pd^{2+} ions added was then plotted.

Equation used for calculating detection limit (DL):

$DL = C_L \times E_T$

C_L = Conc. of Ligand; E_T = Equiv. of Titrant at which change observed.

Thus;

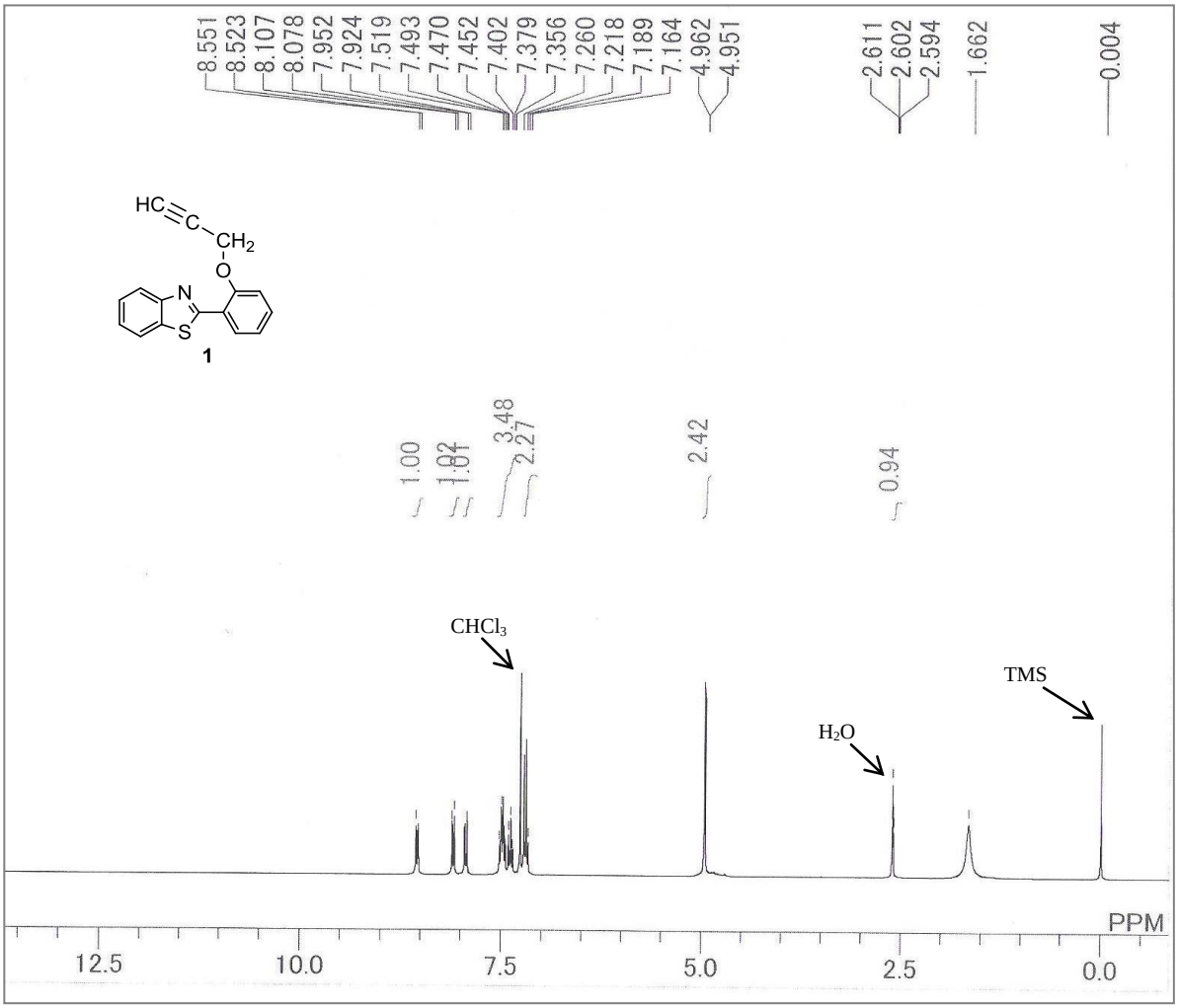
$DL = 5 \times 10^{-6} \times 0.008 = 0.04 \times 10^{-6} = 4 \times 10^{-8}$

or

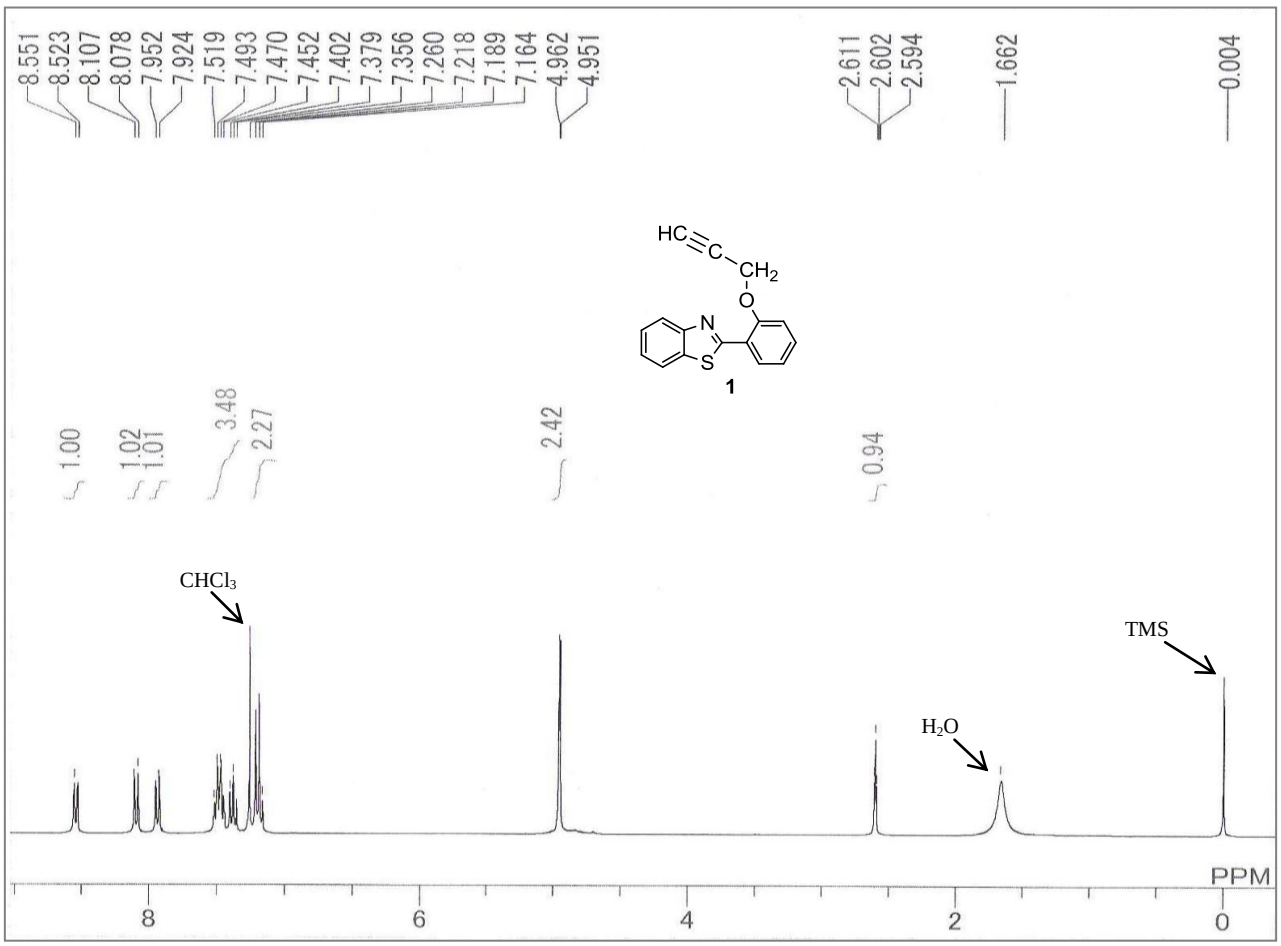
$= 40 \times 10^{-9} = 40$ nanomolar

[1] G. L. Long and J. D. Winefordner, *Anal. Chem.*, 1983, **55**, 712A.

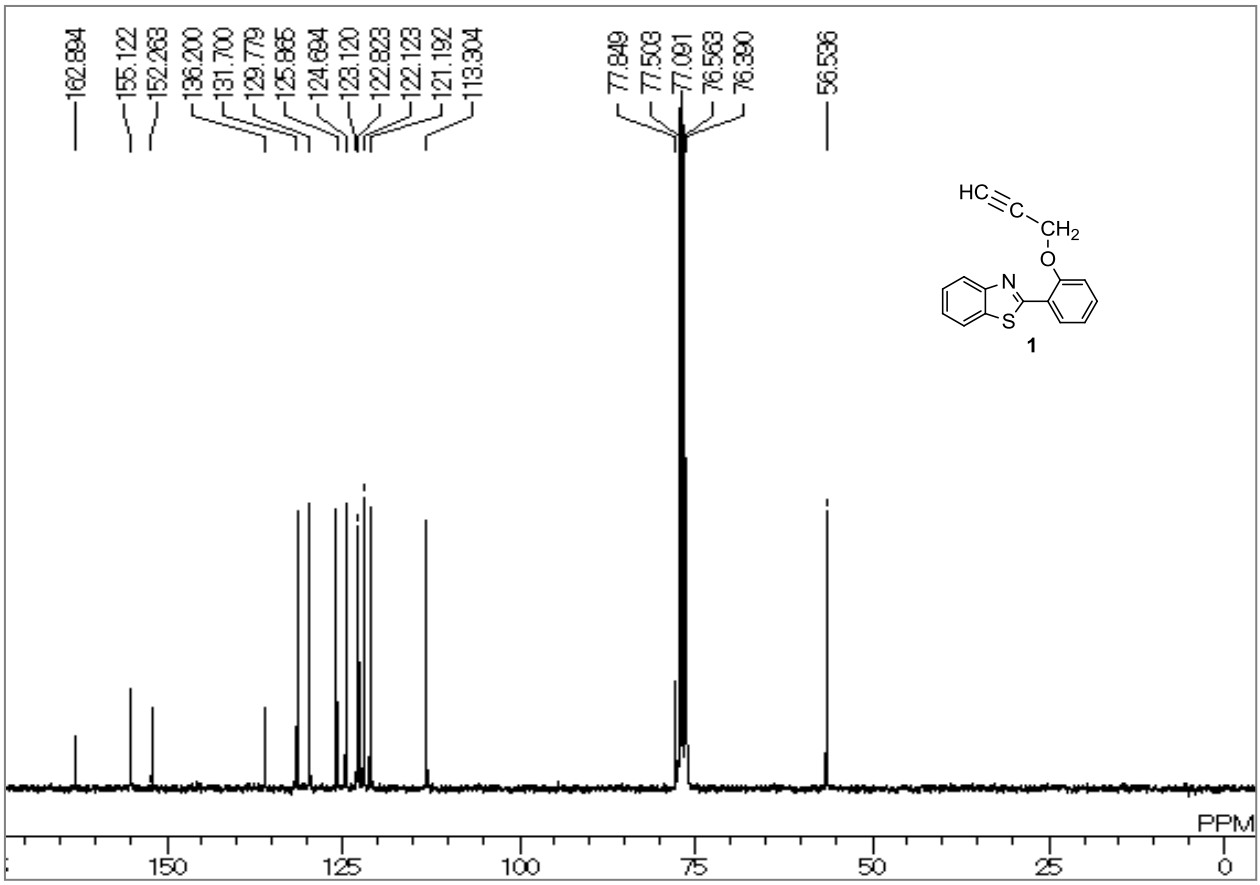
^{1}H NMR ($CDCl_3$, 300 MHz, ppm) spectrum of **1** (Full Scale)



^{1}H NMR ($CDCl_3$, 300 MHz, ppm) spectrum of **1** (Expanded)



^{13}C NMR ($CDCl_3$, 300 MHz, ppm) spectrum of **1**



Mass spectrum of **1**