Fluorescent detection of silver ions in water with organic nano-aggregates

Joydev Hatai, Suman Pal, Subhajit Bandyopadhyay*

Indian Institute of Science Education and Research (IISER) – Kolkata

BCKV Main Campus PO, Mohanpur, Nadia, WB 741252, India

sb1@iiserkol.ac.in

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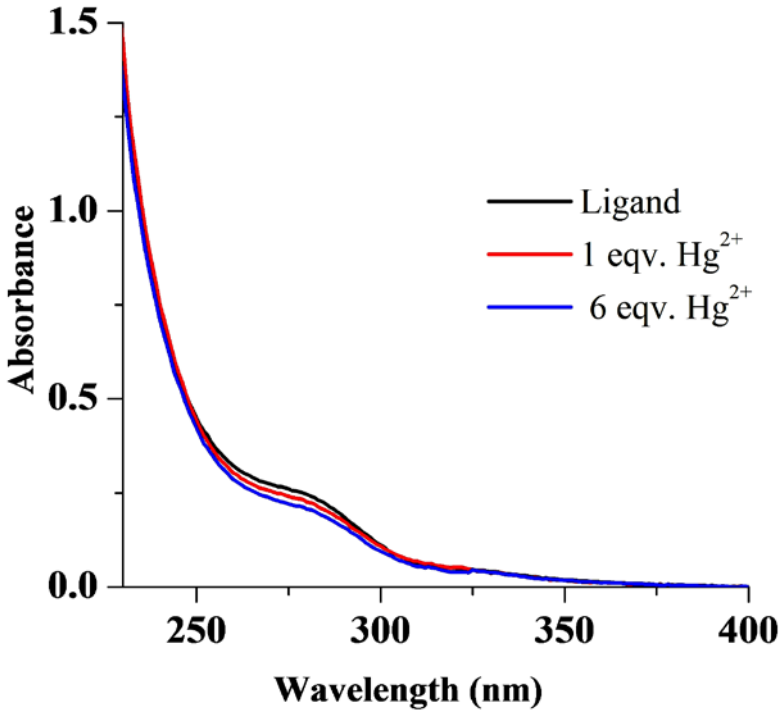


Figure (S1). UV-vis spectra : **1** with Hg^{2+} in H_2O/DMSO (99:1).

Job´s Plot (fluorescence method): Stock solutions of 1 (10 μM) and silver nitrate (1 mM) were prepared separately in respective solvents. The fluorescence spectra was recorded for each of the 11 solutions containing the two solutions (**1** and $AgNO_3$) at a total concentration of 80 μM in CH_3OH/DMSO (99:1) and 8 μM for H_2O/DMSO (99:1) in the following volume ratios. 2.0:0, 1.8:0.02, 1.6:0.04, 1.4:0.06, 1.2:0.08, 1.0:0.10, 0.8:0.12, 0.6:0.14, 0.4:0.16, 0.2:0.18, and 0.0:0.20.

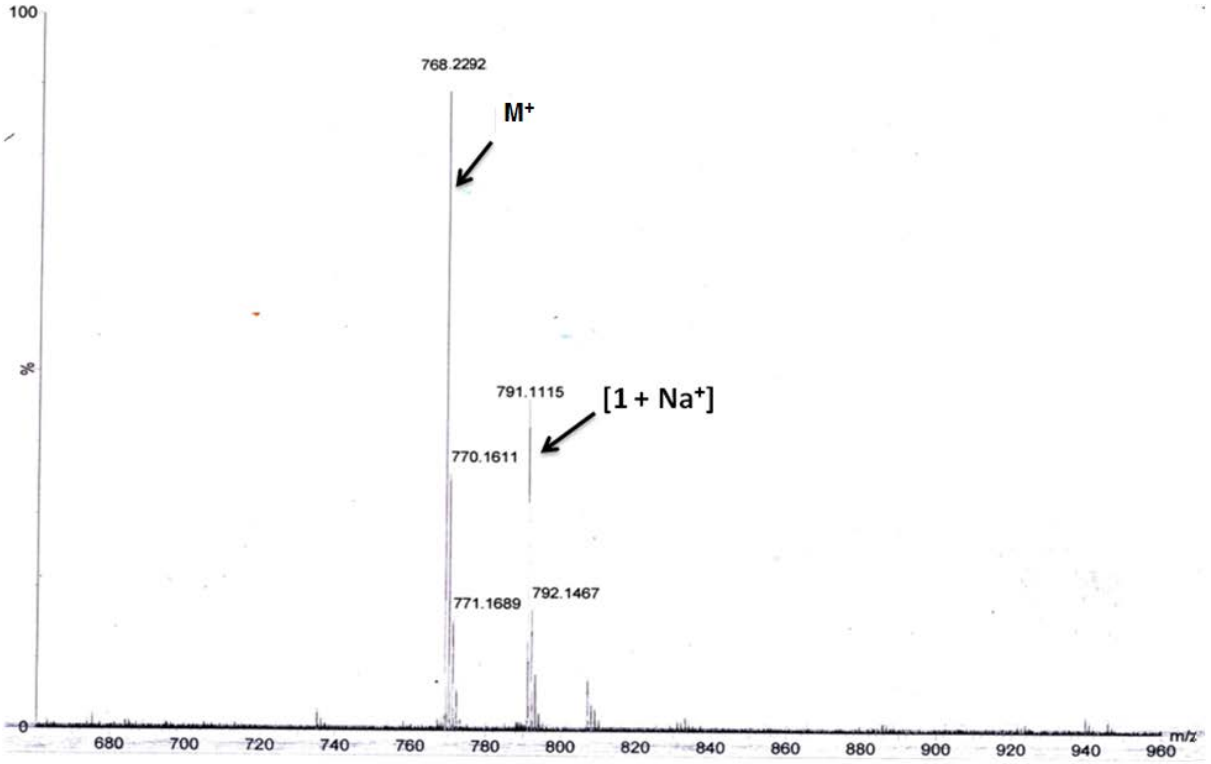


Figure (S2). ESI-MS of the chemosensor **1.**

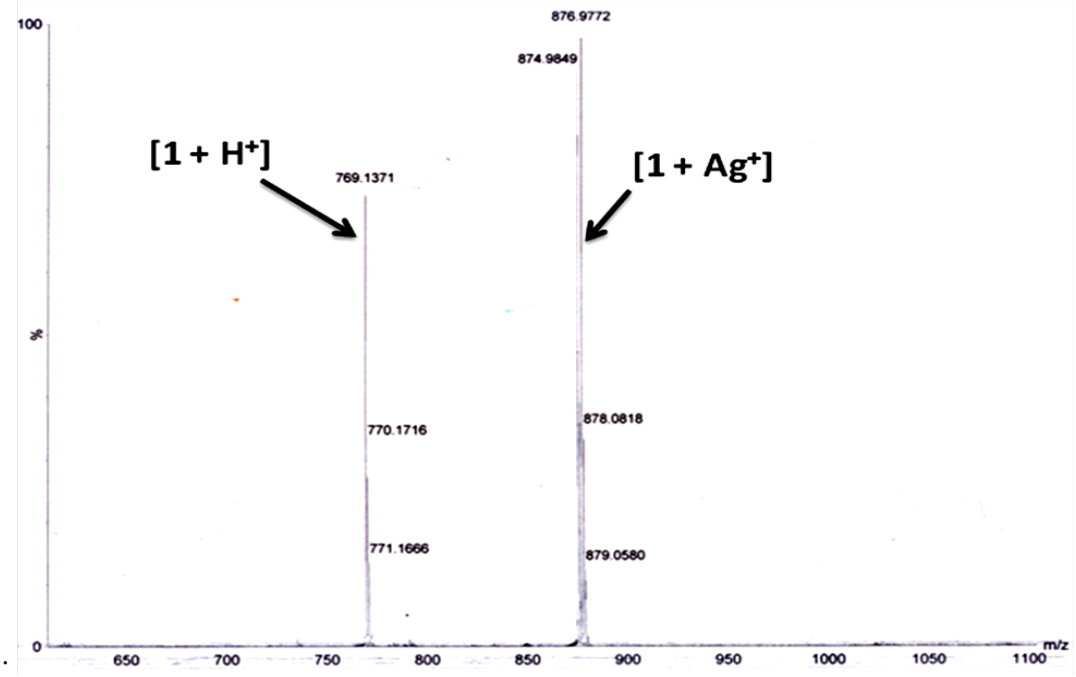
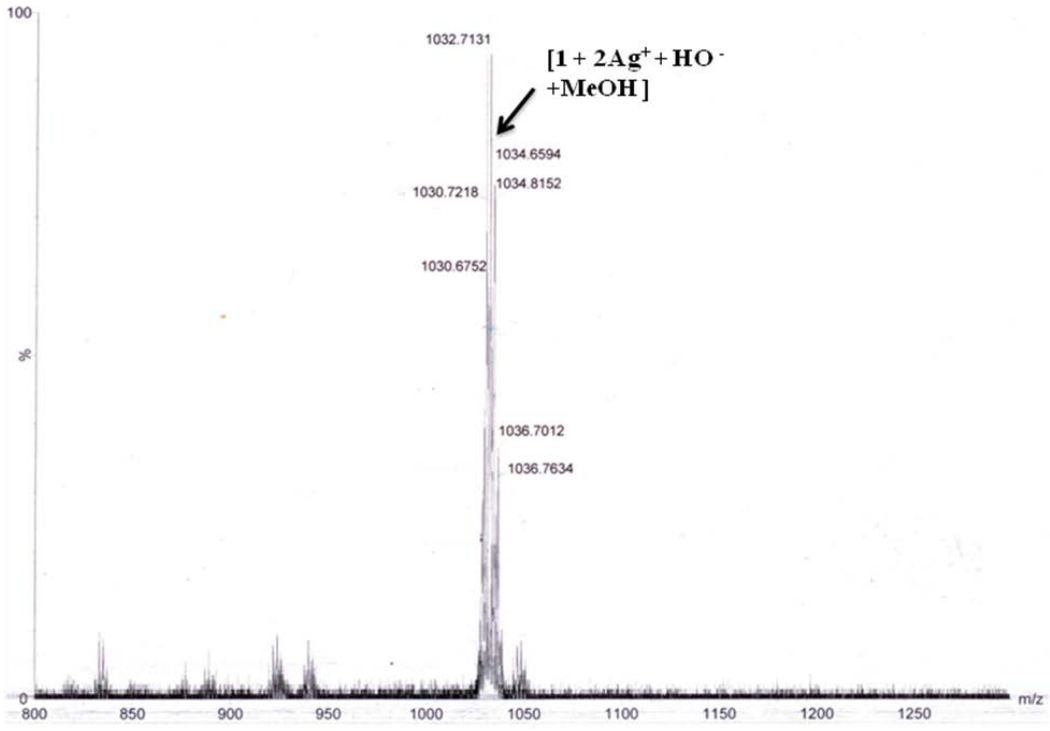


Figure (S3). ESI-MS spectrum of complex **[1 + Ag^+]** from an aqueous sample.



Figure(S4). ESI-MS spectrum of complex **[1 +** $2Ag^+$ + MeOH + HO^-**].**

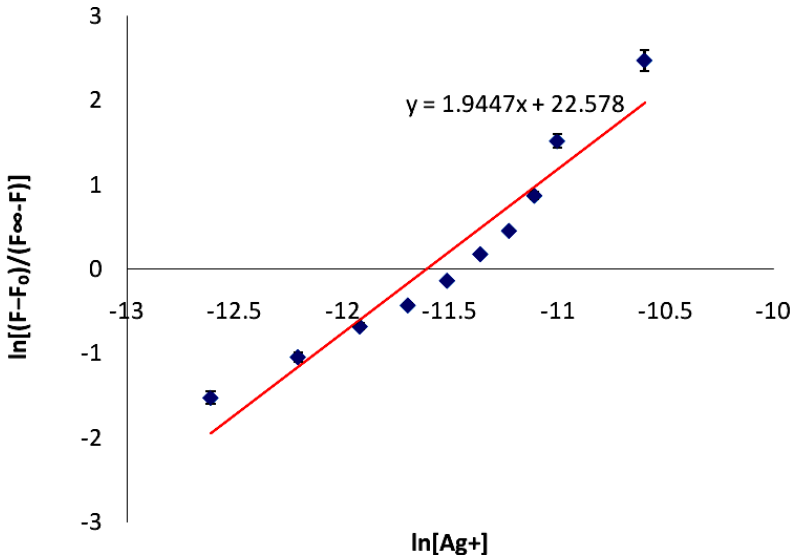


Figure (S**5**)**.** Binding constant in MeOH:DMSO (99:1, v/v) was determined from the plot of $\ln[(F-F_0)/(F_\infty-F)]$ against $\ln[Ag^+]$; the stoichimetry of 1-Ag^+ association, obtained directly from the slope, is 1.94 ≅ 2. Following equation 1, the intercept gave an association constant of 8.0 x 10^5 M^{-2}. The error calculated from experiments performed in triplicate was 6%.

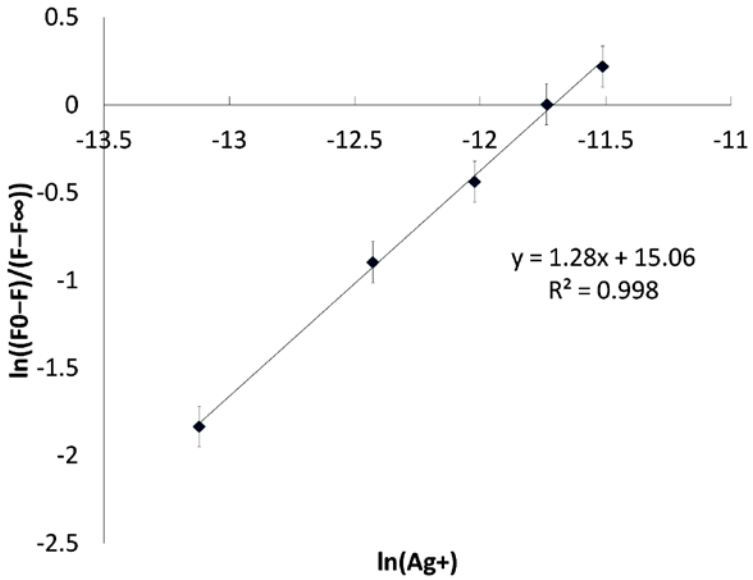
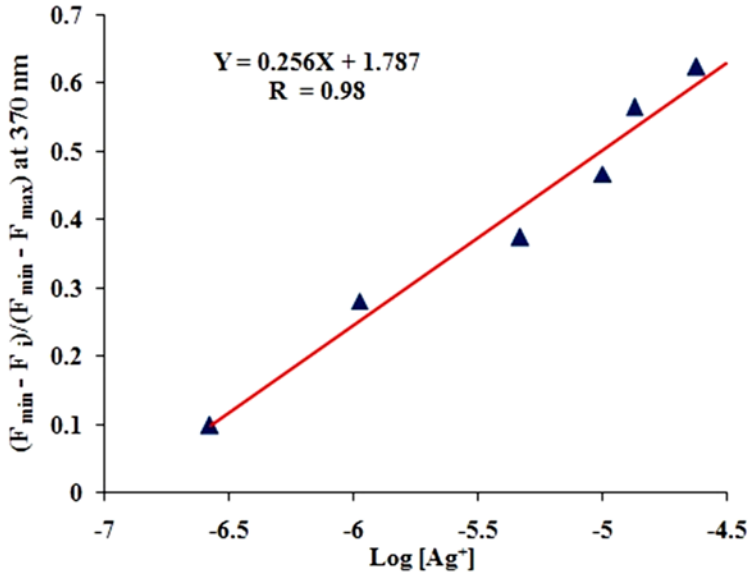


Figure (S**6**). Binding constant in H_2O:DMSO (99:1, v/v) was determined from the plot of $\ln[(F-F_0)/(F_\infty-F)]$ against $\ln[Ag^+]$; the stoichimetry of 1-Ag^+ association, obtained from the slope, is 1.28. Following equation 1, the intercept gave an association constant of 1.37 x 10^6 M^{-1}. The error calculated from experiments performed in triplicate was 4%.



Figure(S7). Determination of detection limit from fluorescence intensity of chemosensor **1** in H_2O/DMSO (99:1, v/v).

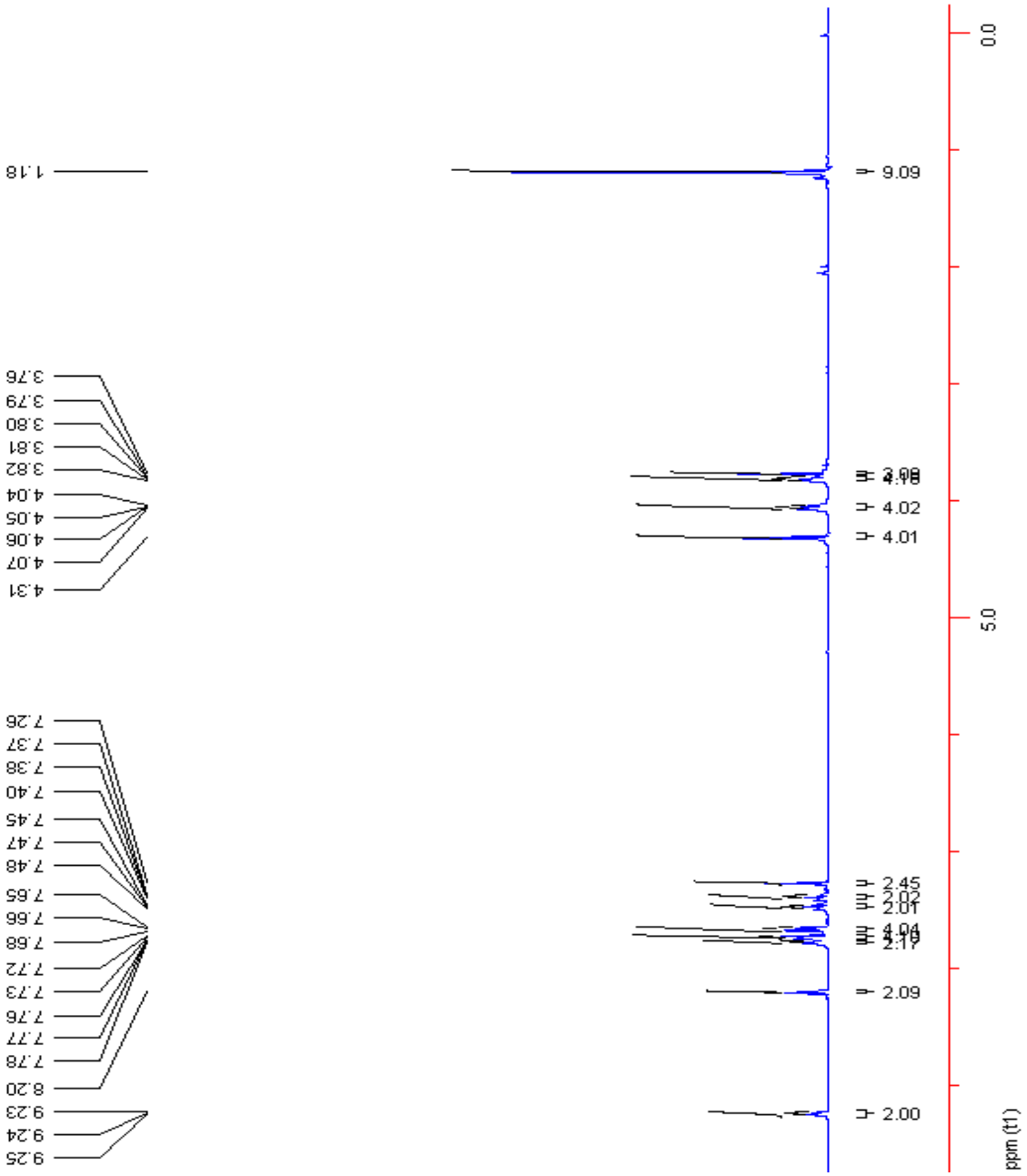


Figure (S8). ^{1}H-NMR spectrum of **1**.

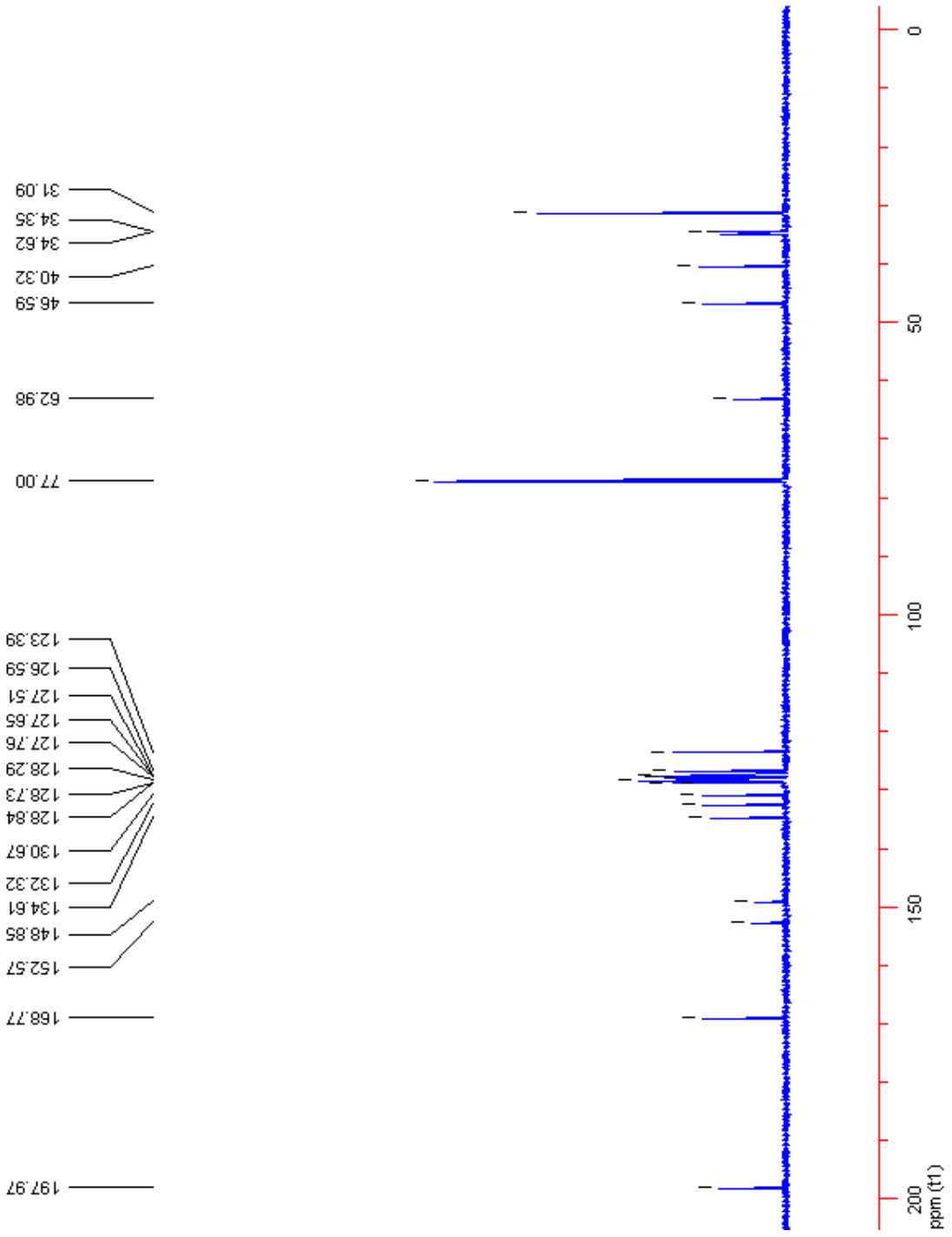


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Figure (S9). ^{13}C-NMR spectrum of **1.**