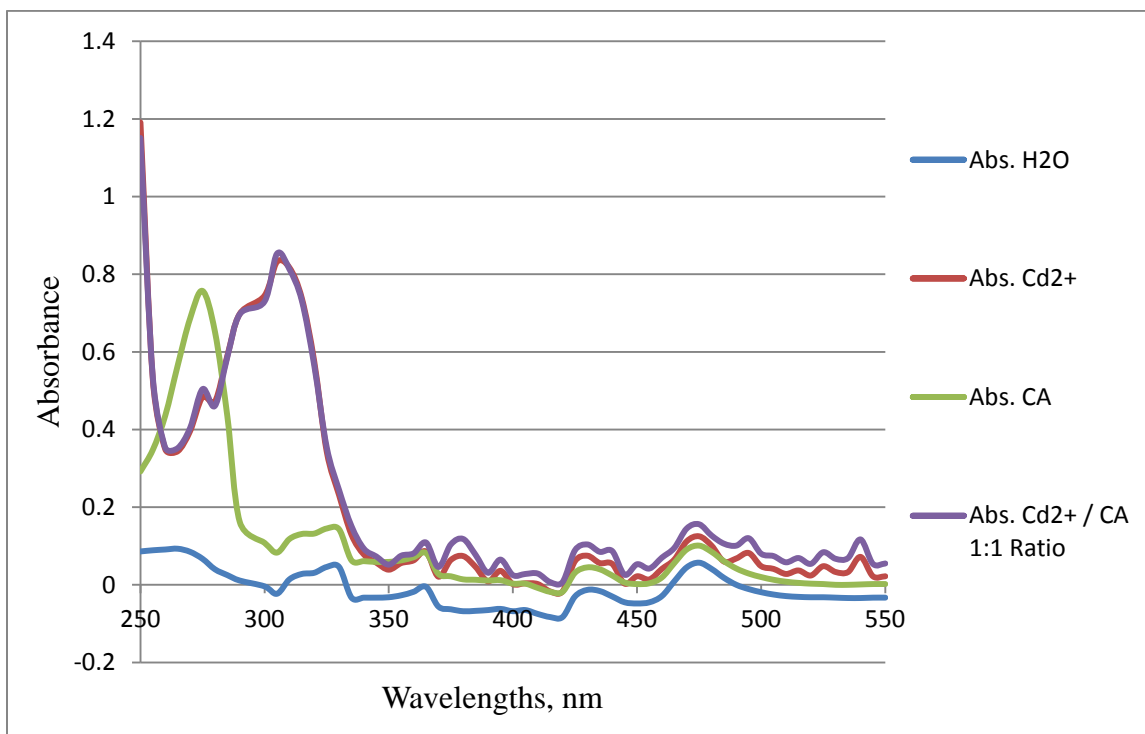
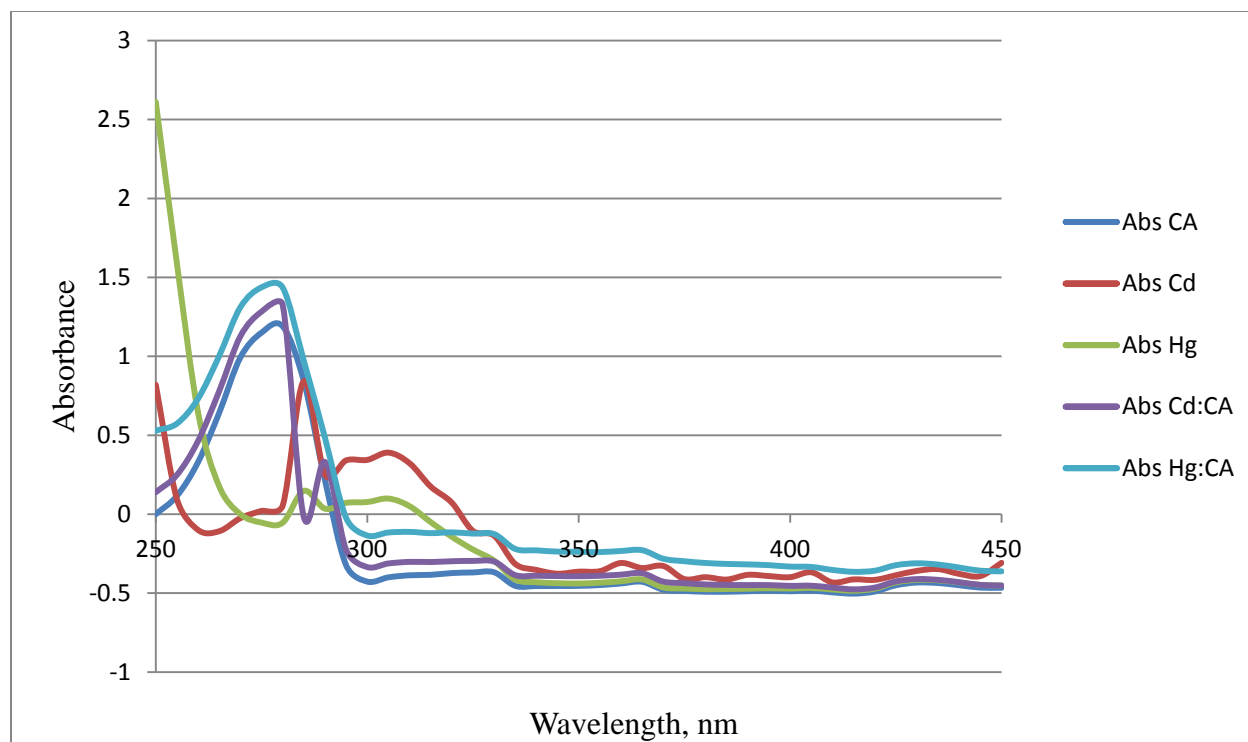


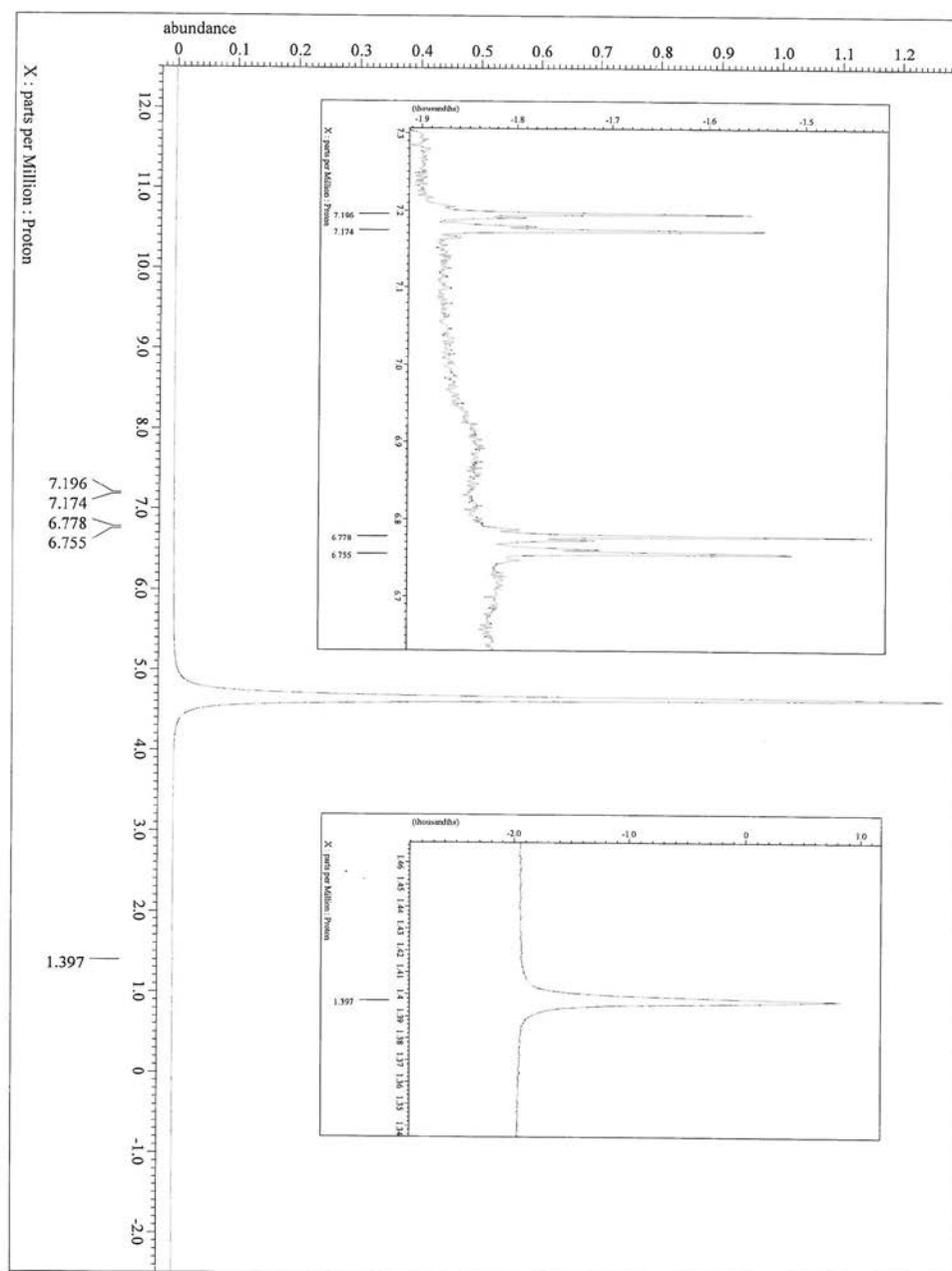
Supplementary Figures



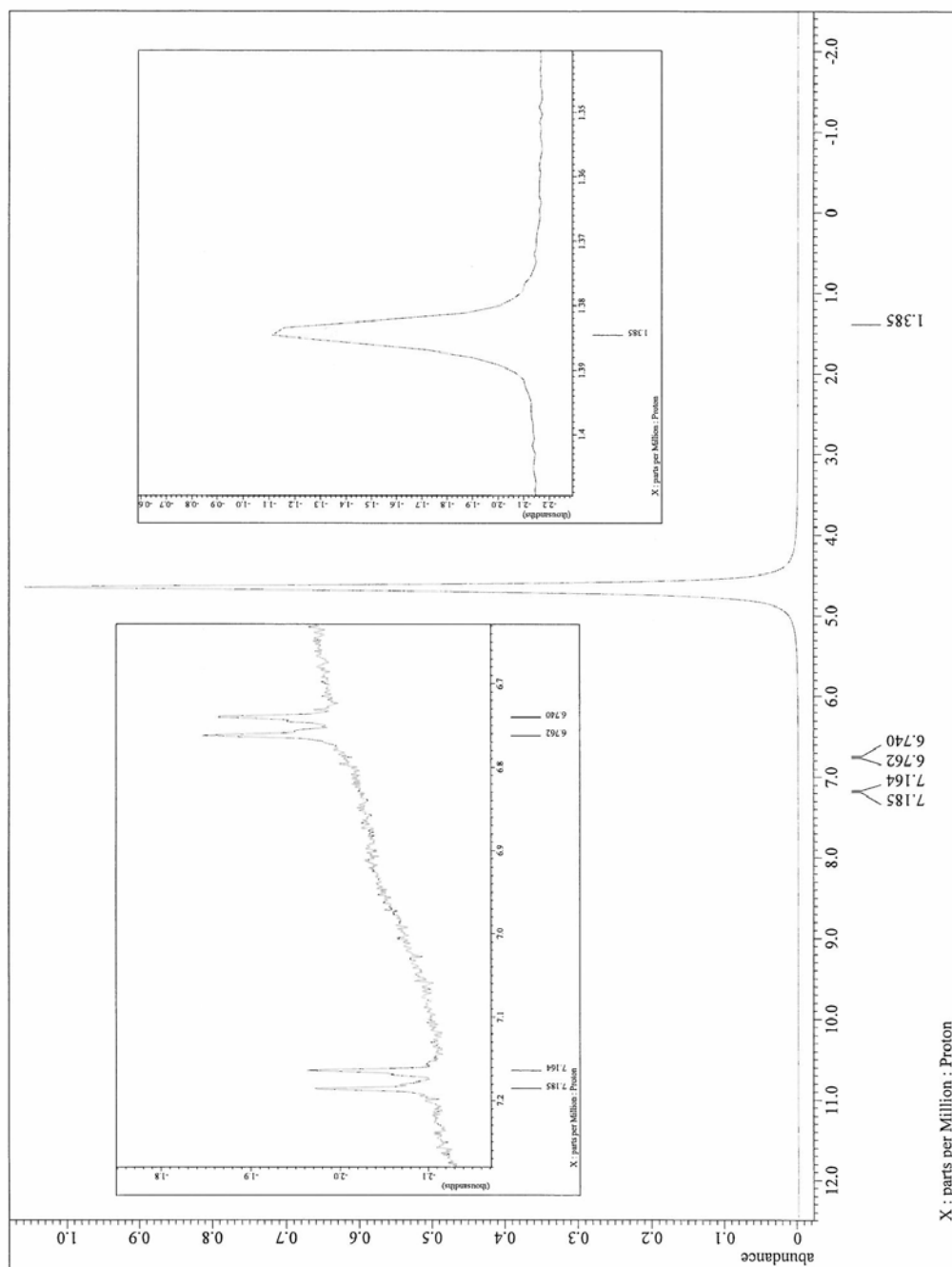
Supplementary Figure 0. UV-Vis absorption spectra of: DI H₂O as control (no significant absorption was observed), Free Cd²⁺ in the form of Cd(NO₃)₂, Free CA and Cd²⁺:CA in 1:1 molar ratio in aqueous solutions, 25°C.



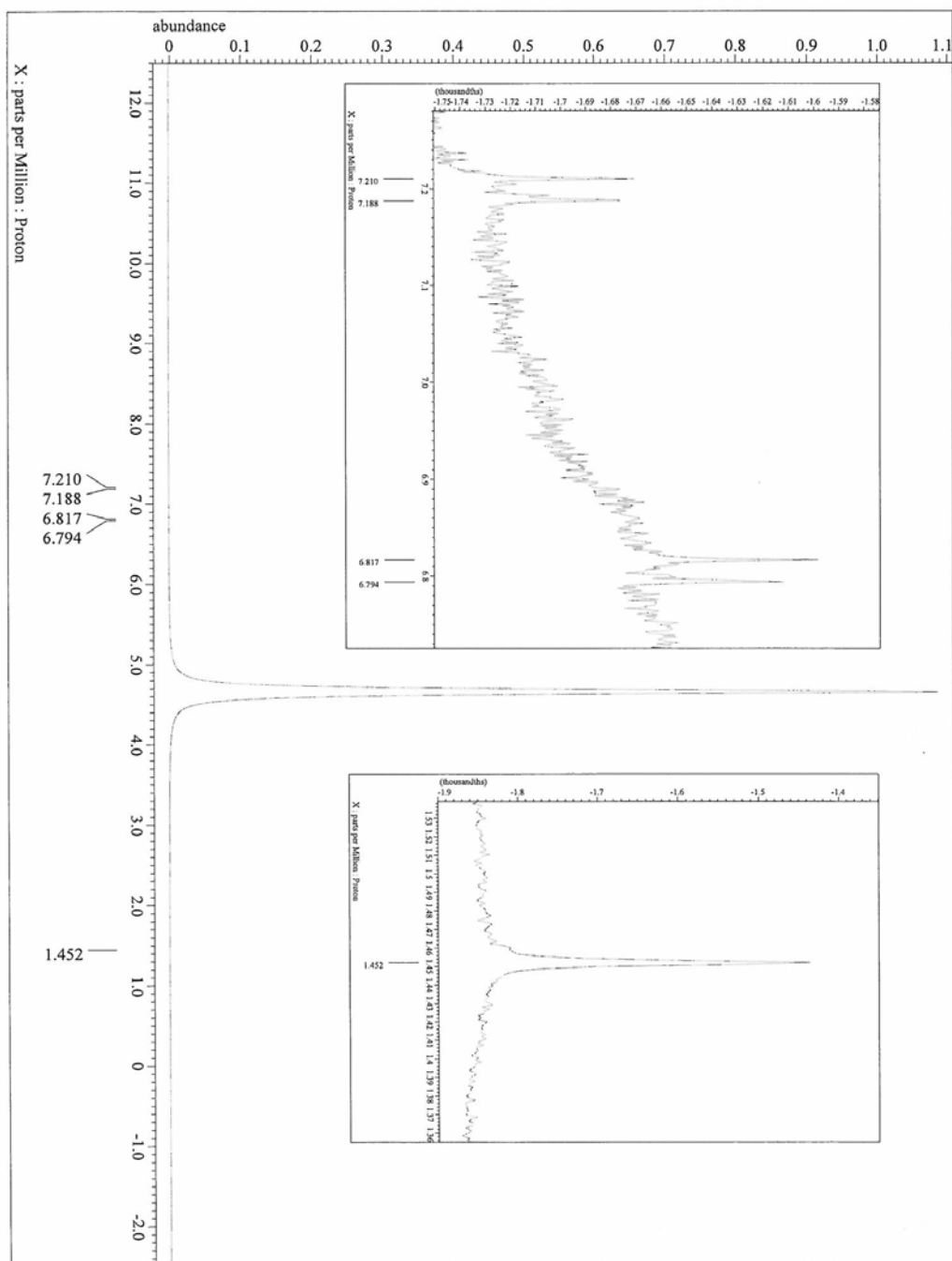
Supplementary Figure 1. Qualitative UV-Vis Spectroscopy of CA, Cd^{2+} , Hg^{2+} , Cd^{2+} :CA (1:7 ratio) and Hg^{2+} :CA (1:10 ratio) the selections of these ratios was due to 1-ease of pipetting and to make sure that there are more CA ligand compared to that of the free metal ion to prevent metal-ion hydrolysis in aqueous solutions.



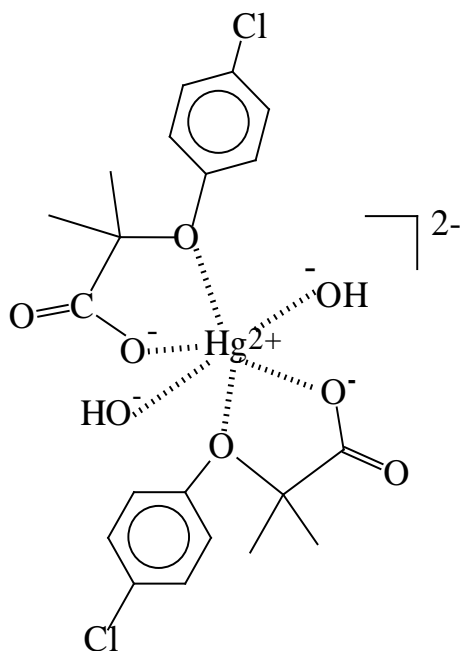
Supplementary Figure 2. ^1H -NMR Spectrum of free CA in D_2O , 25°C two sets of peaks appeared, one for the aliphatic Methyl groups at 1.39 ppm and a second set for the aromatic ring at both (6.77 ppm & 7.19 ppm). The methyl peak is sharp compared to that of the CA- Cd^{2+} complex (Supplementary Figure 3).



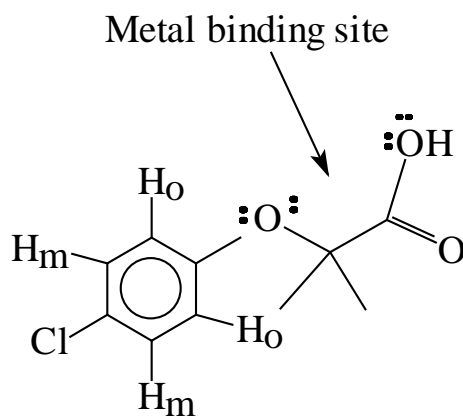
Supplementary Figure 3. ^1H -NMR Spectrum of CA- Cd^{2+} complex in D_2O , 25°C two sets of peaks appeared, one for the aliphatic Methyl groups at 1.38 ppm and a second set for the aromatic ring at both (6.76 ppm & 7.18 ppm). The methyl peak is broader compared to that of the free CA (Supplementary Figure 2).



Supplementary Figure 4. ^1H -NMR Spectrum of CA- Hg^{2+} complex in D_2O , 25°C two sets of peaks appeared, one for the aliphatic Methyl groups at 1.45 ppm and a second set for the aromatic ring at both (6.81 ppm & 7.21 ppm). The methyl peak is sharper compared to that of the CA- Cd^{2+} complex (Supplementary Figure 3).



Scheme 1. Proposed solution structure of $[\text{Hg}^{2+}\text{-CA-Hydroxo}]$ monomer complex. The complex $[\text{Hg}^{2+}(\text{clofibrate})_2(\text{OH}^-)_2]^{2-}$ accounts for the location of 4.0 H^+ -equivalents.



Scheme 2. Structure of CA showing the two different types of aromatic protons observed in the ^1H -NMR experiment in D_2O at 25°C .