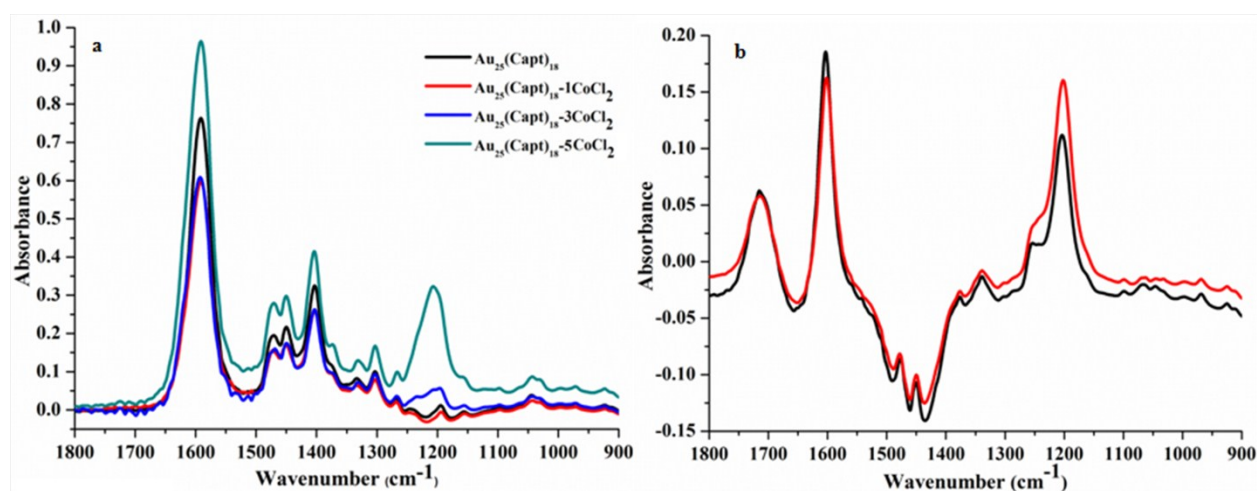


## Supporting Information

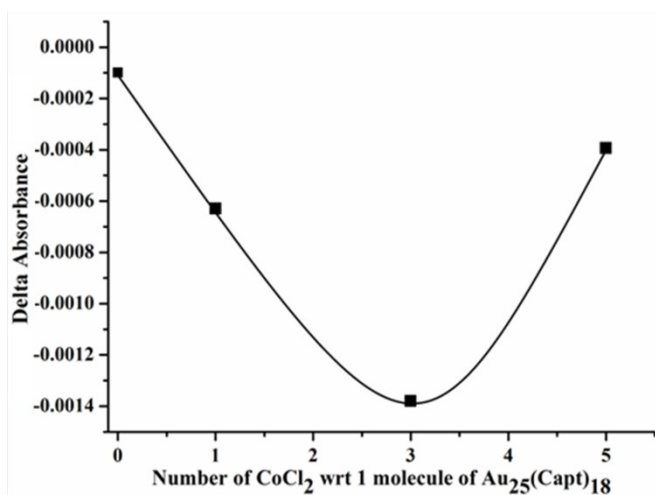
### Amplified vibrational circular dichroism as a manifestation of interaction between water soluble gold nanocluster and cobalt salt

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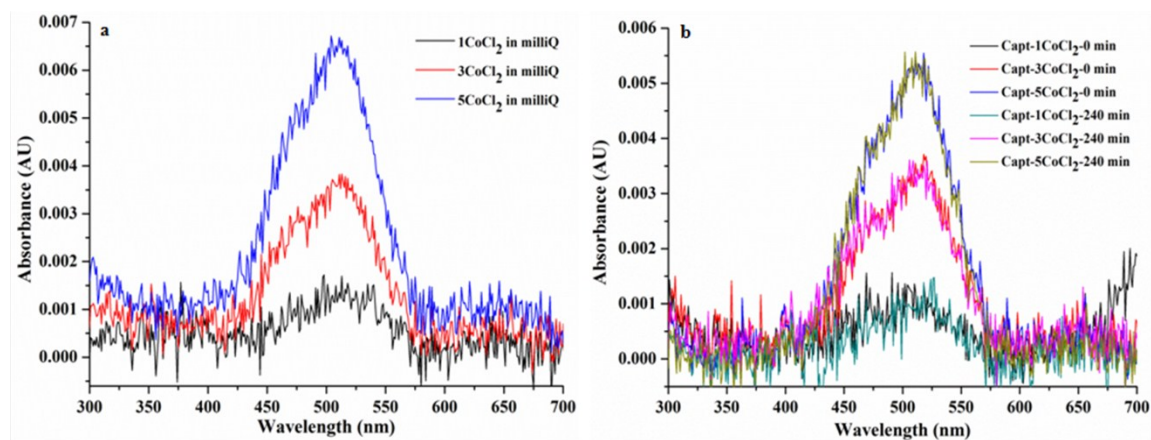
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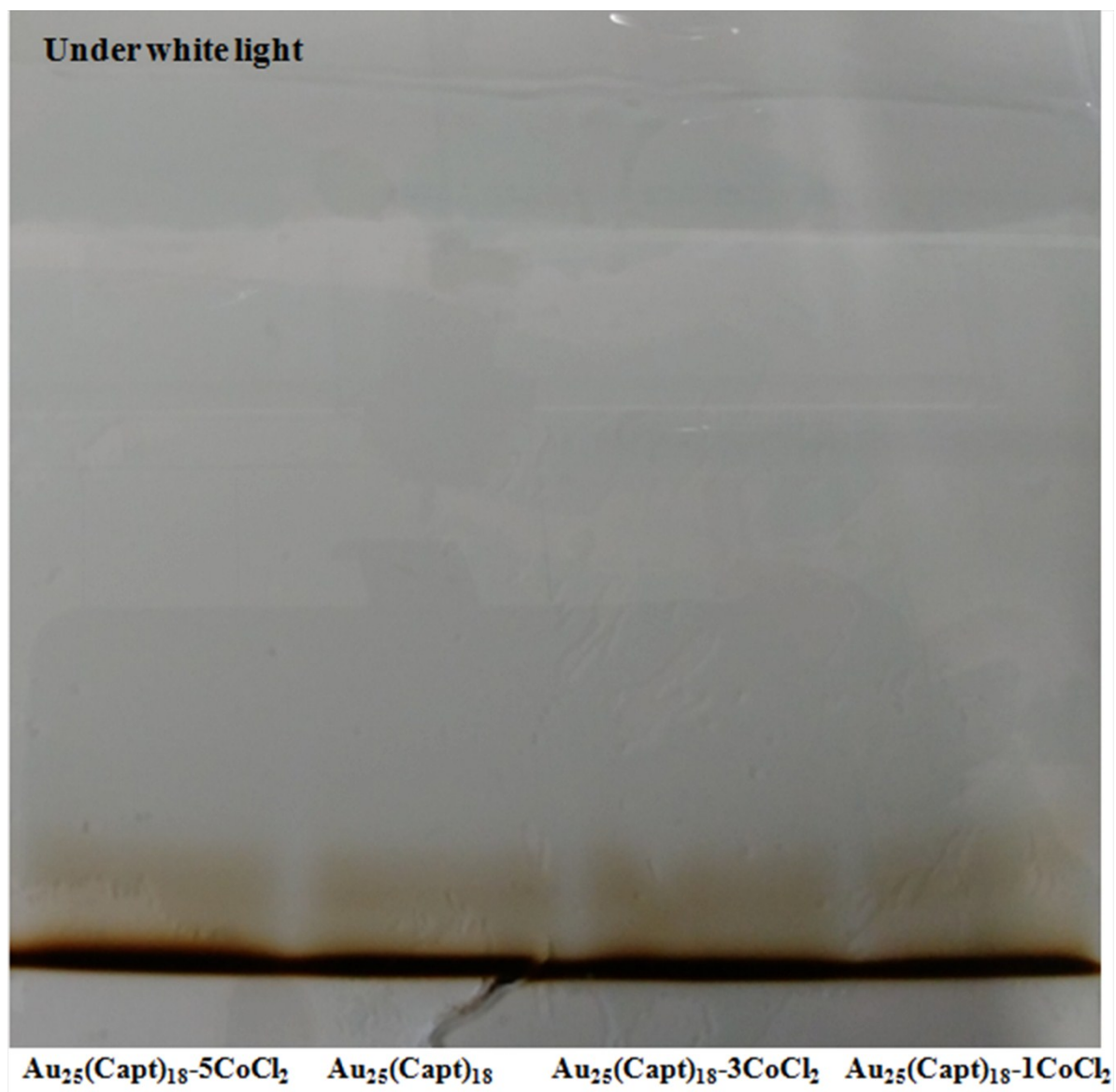
**Fig S1** (a) IR spectra of Au<sub>25</sub>(Capt)<sub>18</sub> with varying cluster: CoCl<sub>2</sub> ratio (b) IR spectra of captopril (black solid line) and of captopril in presence of CoCl<sub>2</sub> (red solid line captopril:CoCl<sub>2</sub> ratio 1:18). The band at 1200 cm<sup>-1</sup> is partially due to absorption by the solvent (D<sub>2</sub>O). The negative band between 1400 and 1500 cm<sup>-1</sup> in the captopril spectra is due to incomplete compensation of the HDO bending mode.



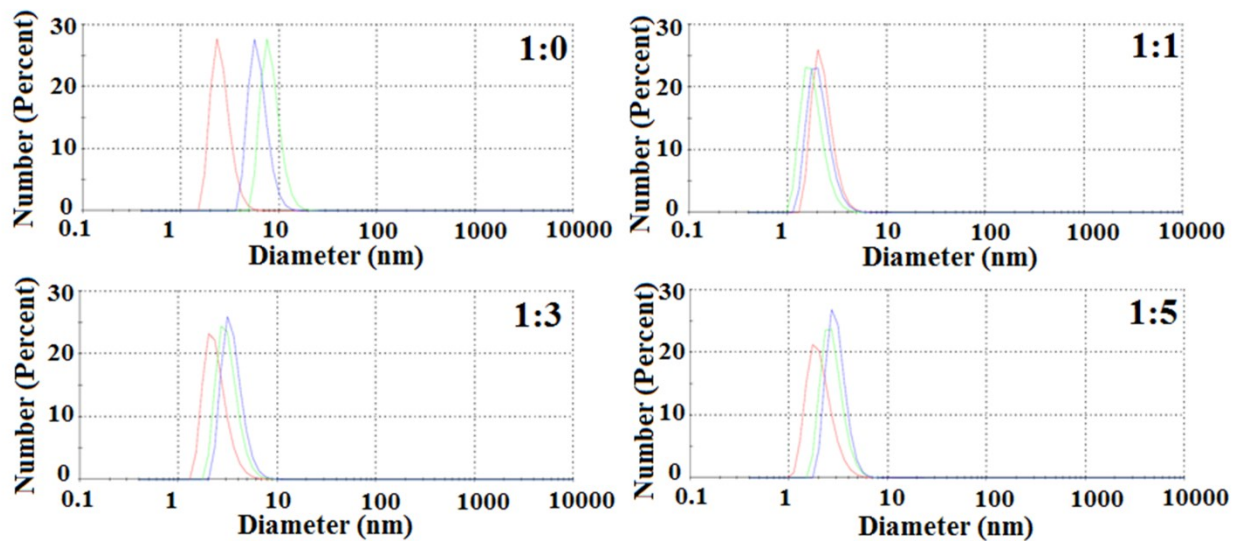
**Fig S2** Plot of VCD intensity of the bi-polar band of Au<sub>25</sub>(Capt)<sub>18</sub> around 1600 cm<sup>-1</sup> as a function of CoCl<sub>2</sub> added. The VCD intensity was calculated as the intensity of the positive band minus the intensity of the negative band.



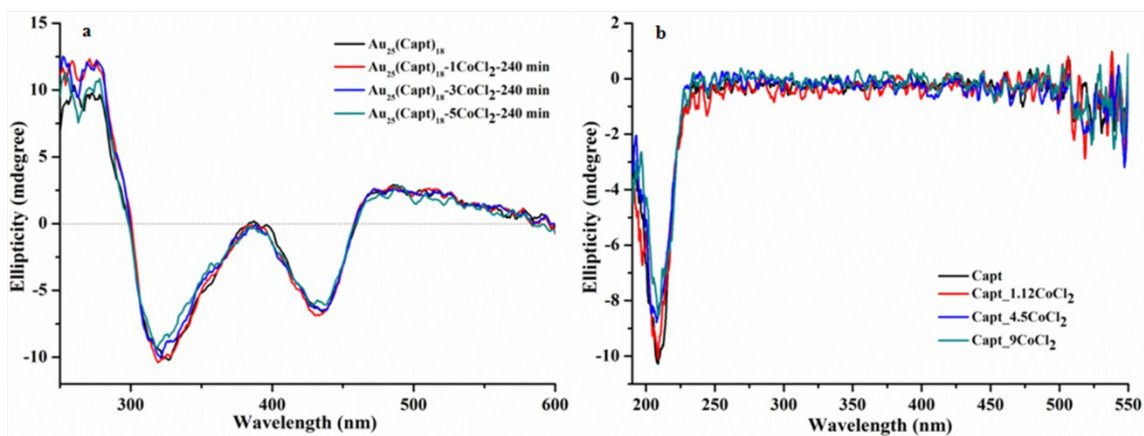
**Fig S3** (a) UV/Vis spectra of CoCl<sub>2</sub> in water. The concentrations used in this experiment were the same as used in the experiments with the cluster (1:1, 1:3, 1:5 ratio). (b) UV/Vis spectra of captopril CoCl<sub>2</sub> mixtures at different molar ratios (1:1, 1:3, 1:5). Spectra were measured immediately after preparation and after 240 min.



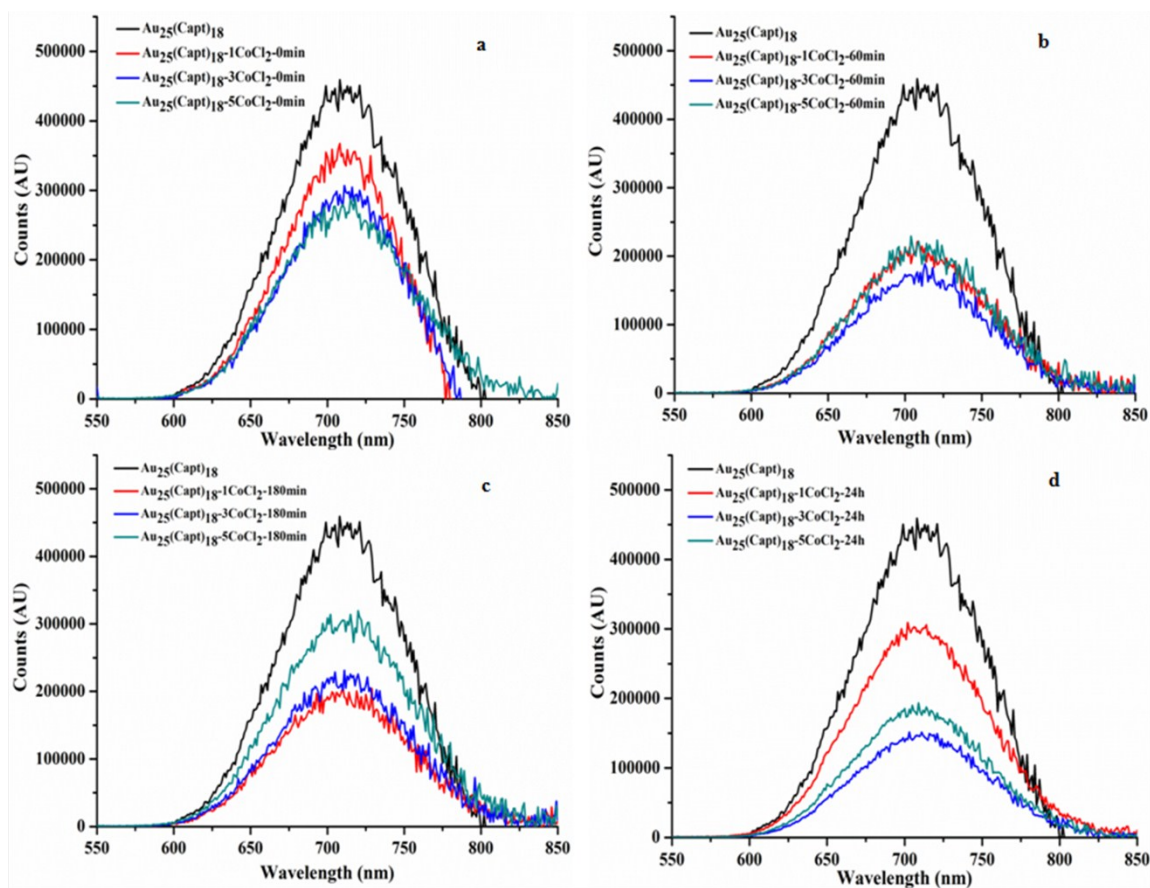
**Fig S4** Image of PAGE experiment. Besides the Au<sub>25</sub>(Capt)<sub>18</sub> cluster sample also solutions of Au<sub>25</sub>(Capt)<sub>18</sub> - CoCl<sub>2</sub> mixtures at different cluster: CoCl<sub>2</sub> molar ratios were applied. The cluster and the salt were allowed to interact for 24 h at room temperature.



**Fig S5** Size (diameter) distribution analysis by dynamic light scattering (DLS). The curves represent three different scans. The top right corner of the figure represents the different ratios of nanocluster :  $\text{CoCl}_2$  used.



**Fig S6** (a) CD spectra of  $\text{Au}_{25}(\text{Capt})_{18}$  and of  $\text{Au}_{25}(\text{Capt})_{18}$ :  $\text{CoCl}_2$  mixtures at different molar ratios (1:1, 1:3, 1:5, red blue and cyan color). (b) CD spectra of captopril (red) and captopril:  $\text{CoCl}_2$  mixtures at different molar ratios (1:1.12, 1:4.5 and 1:9, red, blue and cyan color).



**Fig S7** Fluorescence emission spectra of  $\text{Au}_{25}(\text{Capt})_{18}$  and  $\text{Au}_{25}(\text{Capt})_{18} : \text{CoCl}_2$  mixtures at different molar ratios (1:1, 1:3, 1:5, red blue and cyan color) measured at different times (a) 0 min (b) 60 min (c) 180 min and (d) 24 h. The stock concentration of nanocluster was 0.2 mg/ $\mu\text{l}$  and the concentration of  $\text{CoCl}_2$  was varied. After preparing the solution a small aliquot of the mixtures was taken at the times specified and the emission spectra was measured at the appropriate dilution.