Electronic Supplementary Material (ESI) for Analytical Methods.


# Supporting Information of
# Ascorbic acid functionalized gold nanoparticles as a probe for colorimetric and visual read-out determination of dichlorvos in environmental samples

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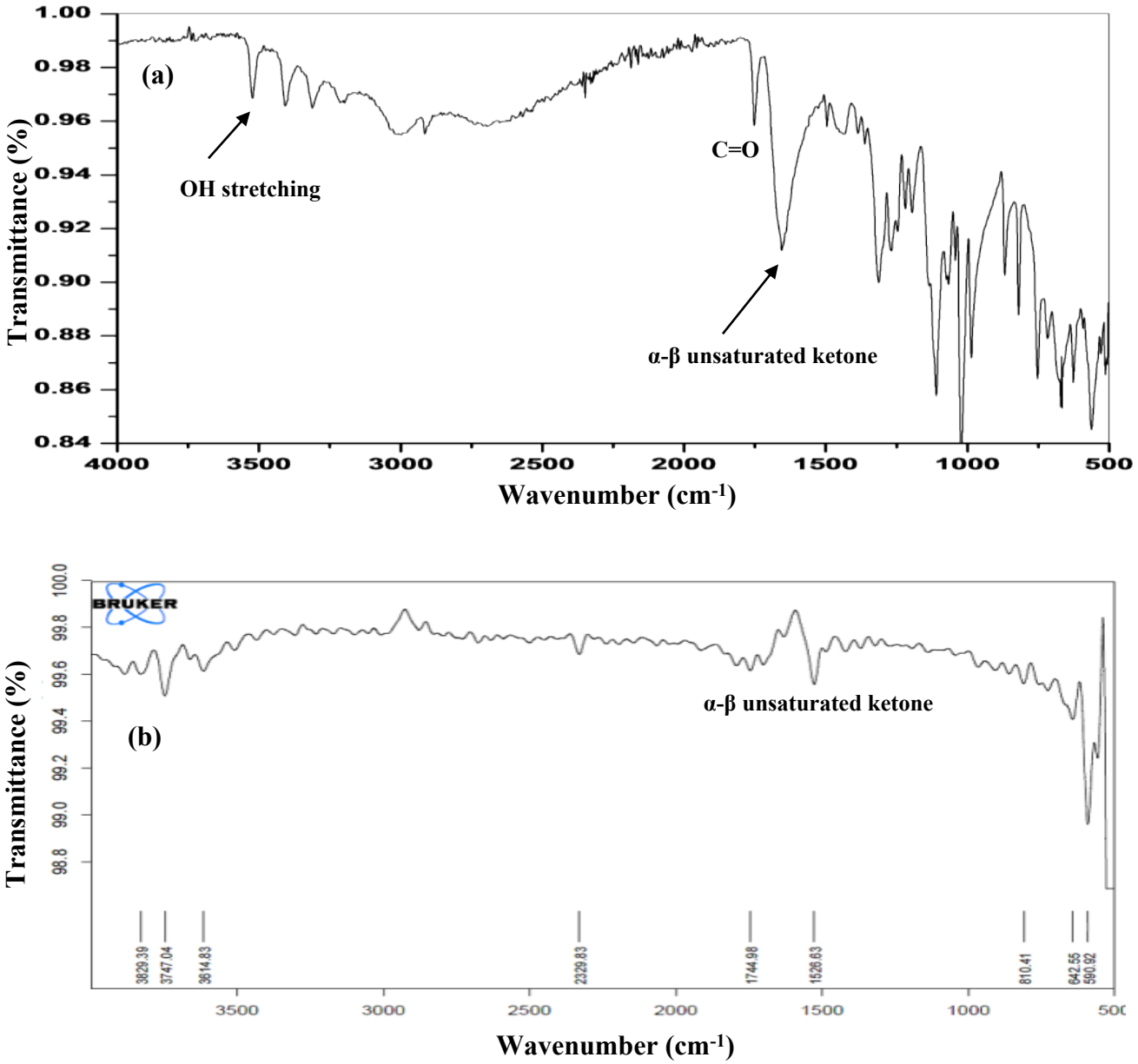


**Figure S1**. FT-IR spectra of (a) pure ascorbic acid and (b) AA-Au NPs

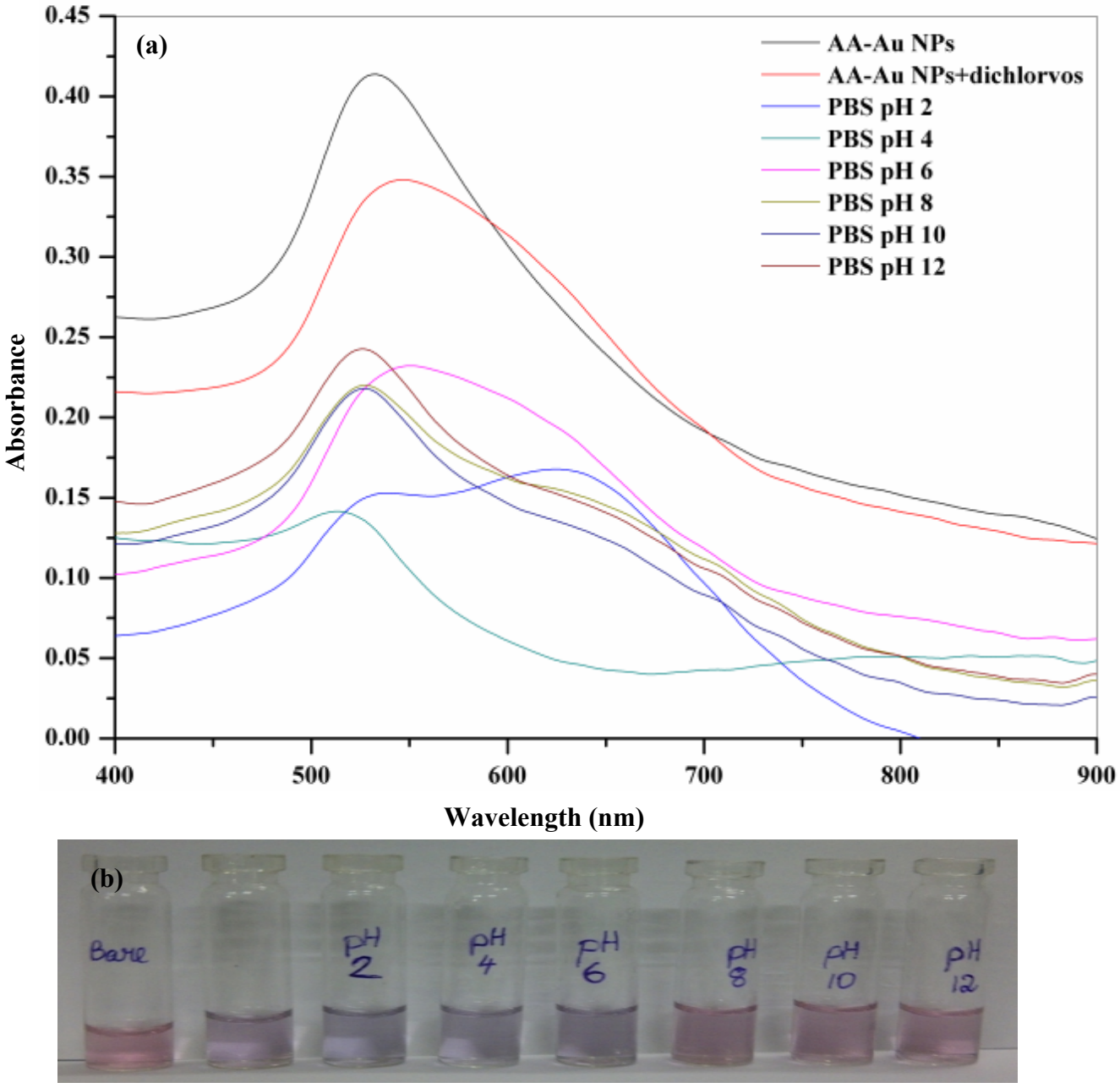


**Figure S2.** (a) UV-visible spectra of AA-Au NPs in presence of dichlorvos at different PBS pH. (b) Photographic image of AA-Au NPs in presence of dichlorvos at different PBS pH.

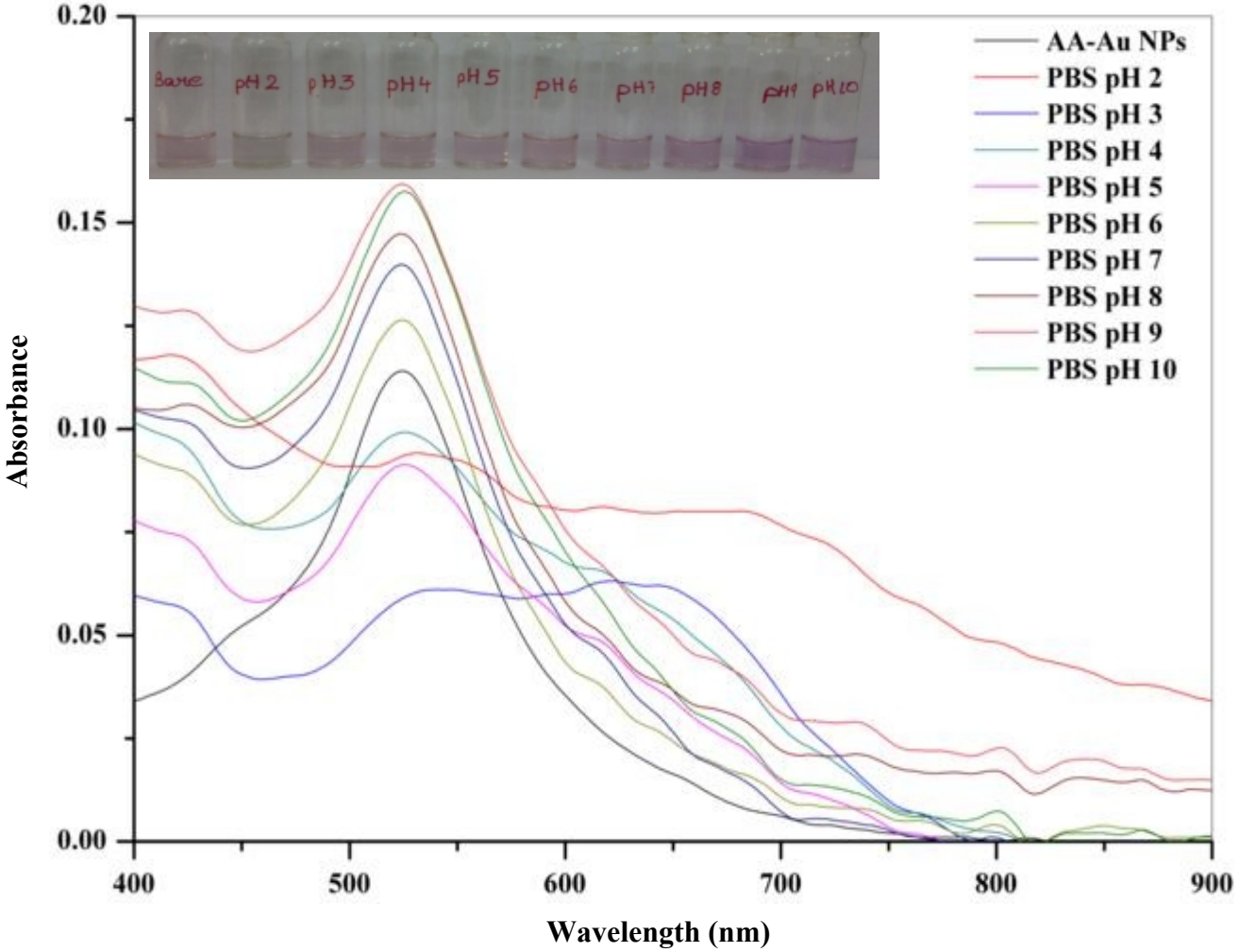


**Figure S3.** UV-visible spectra of AA-Au NPs at different PBS pH from 2 to 10. Inset figures shows AA-Au NPs at different PBS pH from 2 to 10.

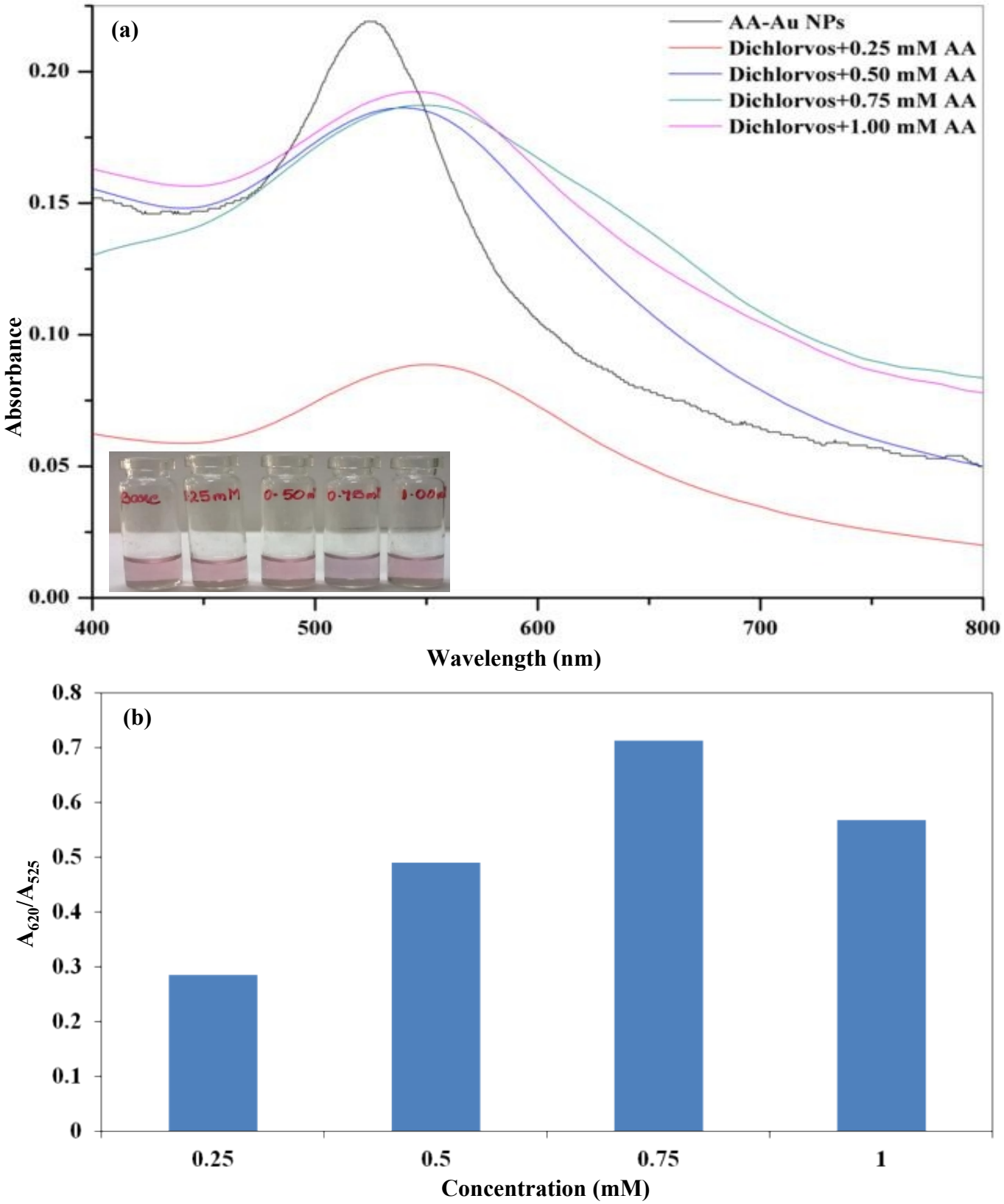


**Figure S4.** (a) UV-visible spectra of AA-Au NPs in the presence of dichlorvos at different concentration of AA and inset photographic images shows the A-Au NPs in the presence of dichlorvos at different concentration of AA. (b) Absorption ratio ($A_{620}/A_{525}$) of AA-Au NPs in the presence of dichlorvos at different concentration of AA.

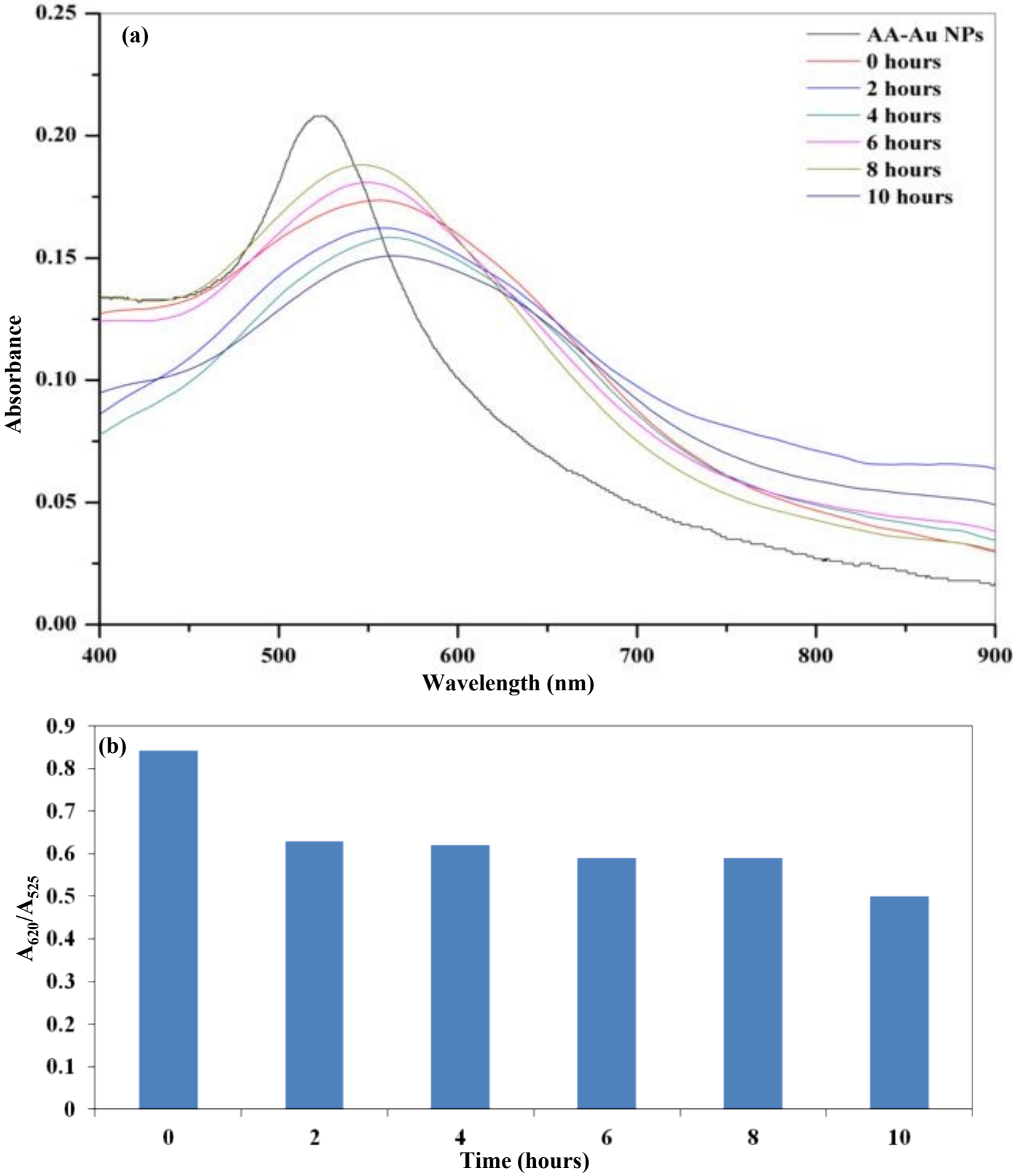


**Figure S5.** (a) UV-visible spectra of AA-Au NPs in the presence of dichlorvos at different time intervals (0 to 10 hours). (b) Absorption ratio ($A_{620}/A_{525}$) of AA-Au NPs in the presence of dichlorvos at different hours.

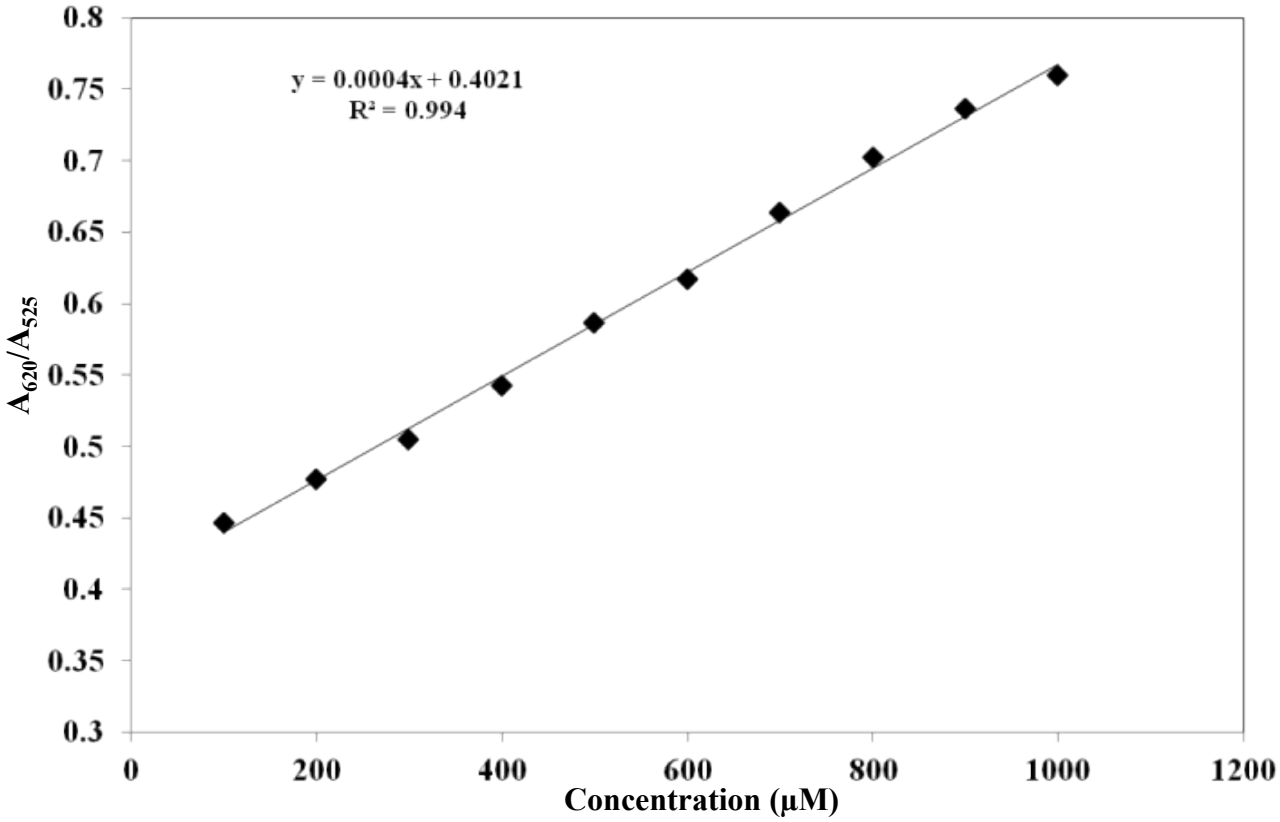


**Figure S6.** Calibration graph for the quantification of dichlorvos by using AA-Au NPs as a colorimetric probe.

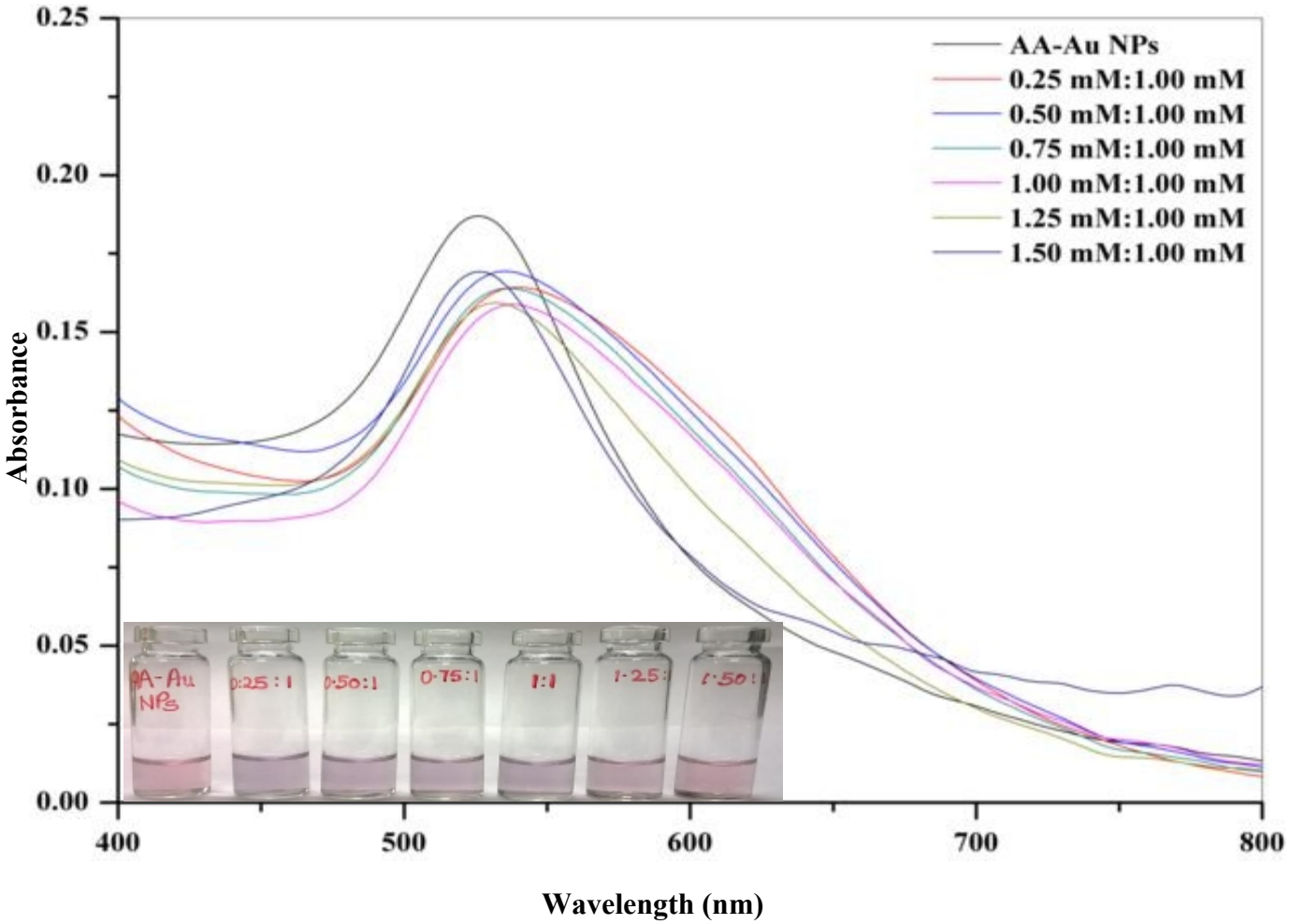


**Figure S7.** UV-visible spectra of AA-Au NPs in the presence of pesticide mixture (thiram, indoxacarb, fenvalerate, metalaxyl and mancozeb) with dichlorvos at different concentration ratios (0.25:1.0 to 1.50:1.0; mM). Inset image shows the color changes of AA-Au NPs in the presence of above pesticide mixture with dichlorvos at different concentration ratios (0.25:1.0 to 1.50:1.0; mM).

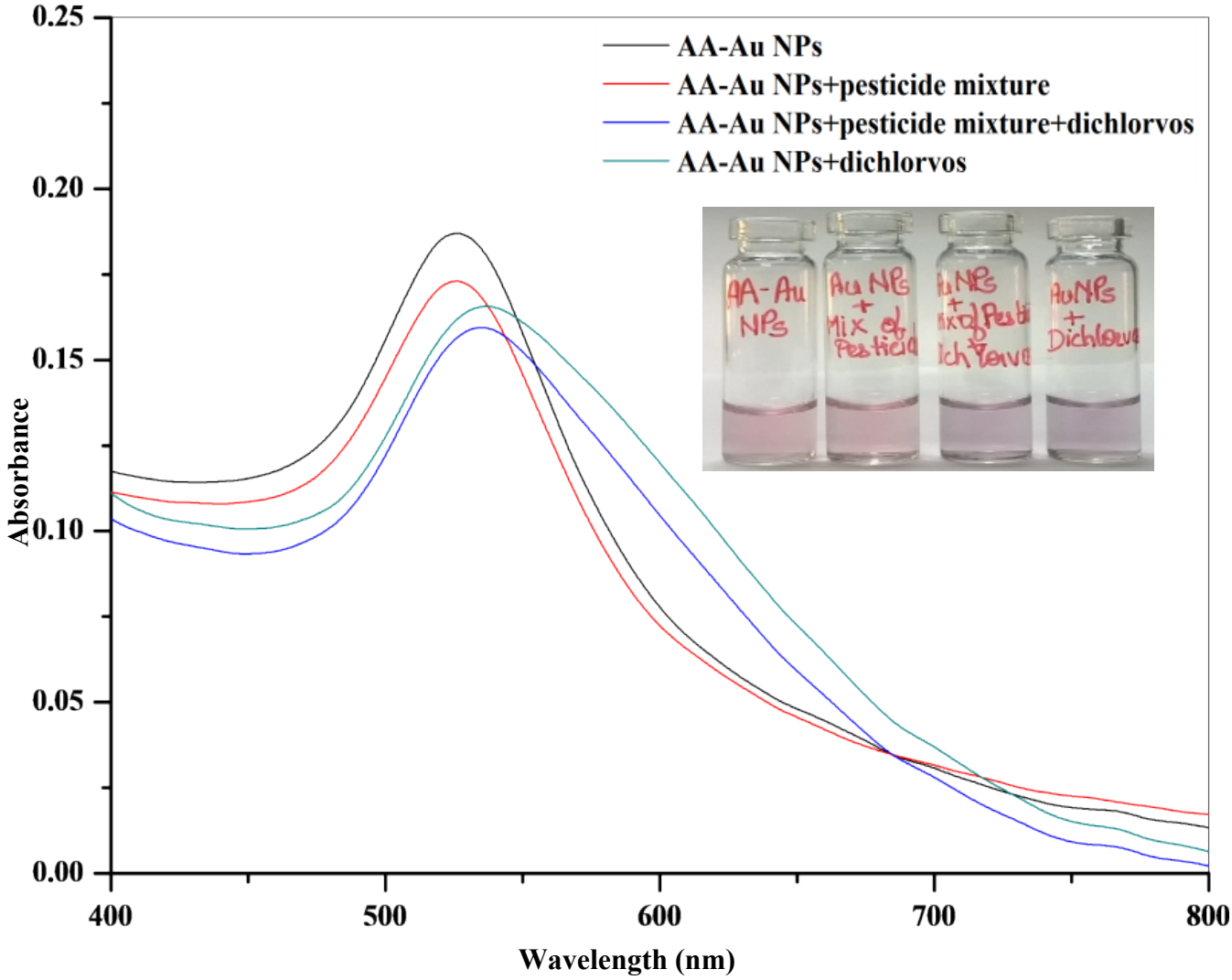


**Figure S8.** Interference of different pesticides (acephate, monocrotophos, chlorpyrifos, quinalphos, triaxophos, glyphosate, thiram, indoxacarb, fenvalerate, matalaxyl and mancozeb, 1.0 mM) on the detection of dichlorvos by using AA-Au NPs as a colorimetric probe. Inset image shows interference of different pesticides on the detection of dichlorvos by using AA-Au NPs as a colorimetric probe.

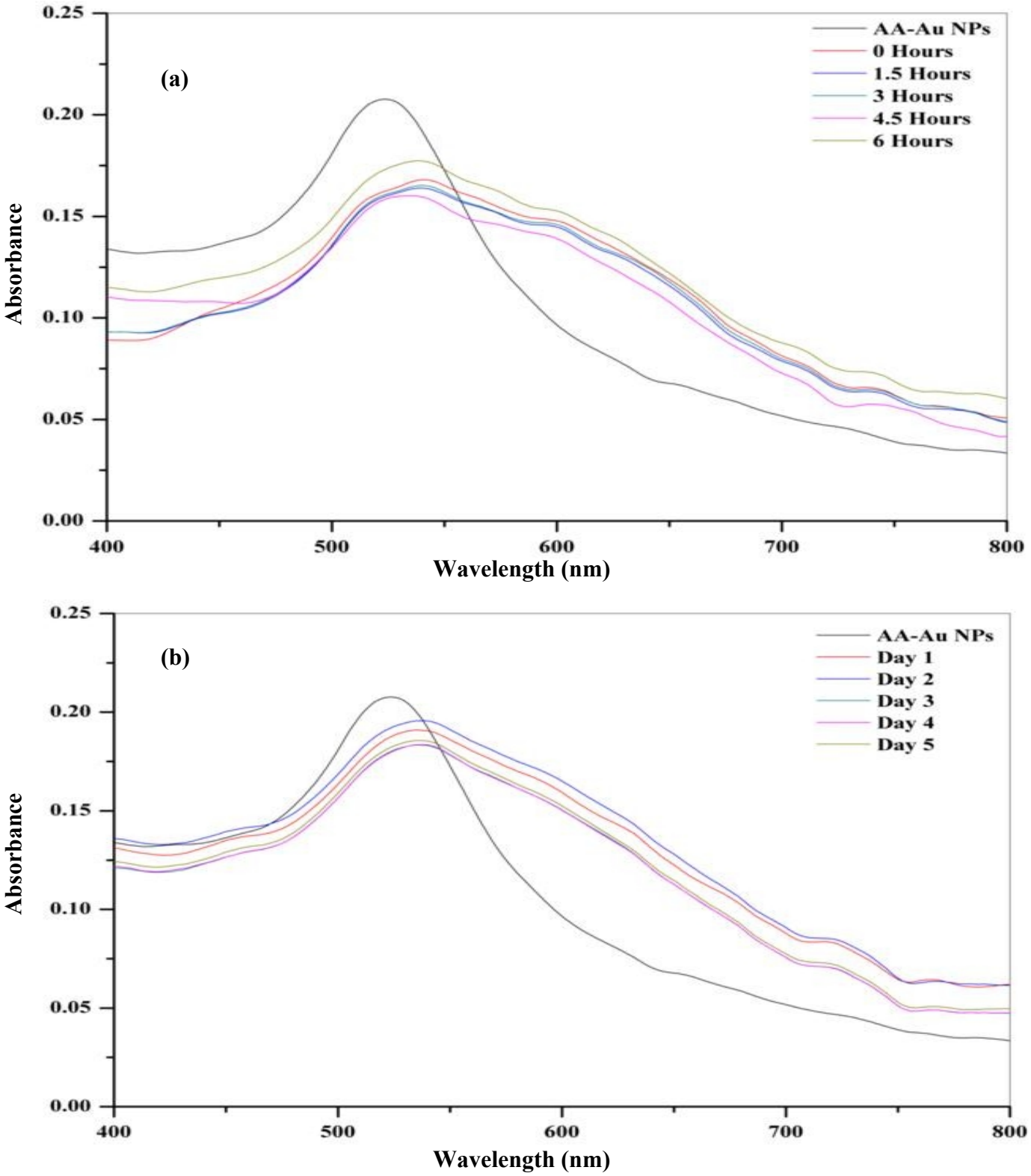


**Figure S9.** (a) Reproducibility of the present method for analysis of dichlorvos (750 µM) at (a) inter-day spectra and (b) at intra-day spectra by using AA-Au NPs as a colorimetric probe.