

Ultrasensitive and selective colorimetric detection of acetamiprid pesticide based on the enhanced peroxidase-like activity of gold nanoparticles

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Electronic Supplementary Information

Supplementary figures:

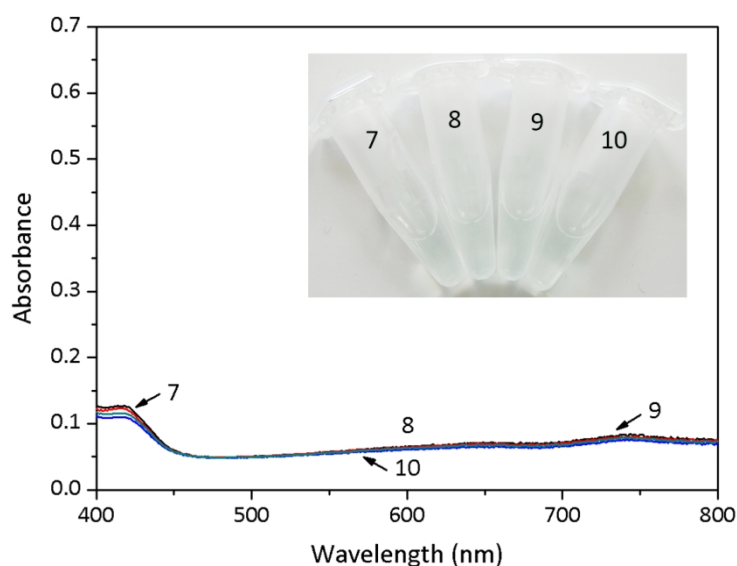


Figure S1 Absorption spectra and colour of solutions contain different substances. Sample 7: ABTS + H₂O₂; Sample 8: S-18 aptamer + ABTS + H₂O₂; Sample 9: acetamiprid (200 µg/L) + ABTS + H₂O₂; Sample 10: S-18 aptamer + acetamiprid (200 µg/L) + ABTS + H₂O₂. The final concentration of S-18 aptamer is 10 nM.

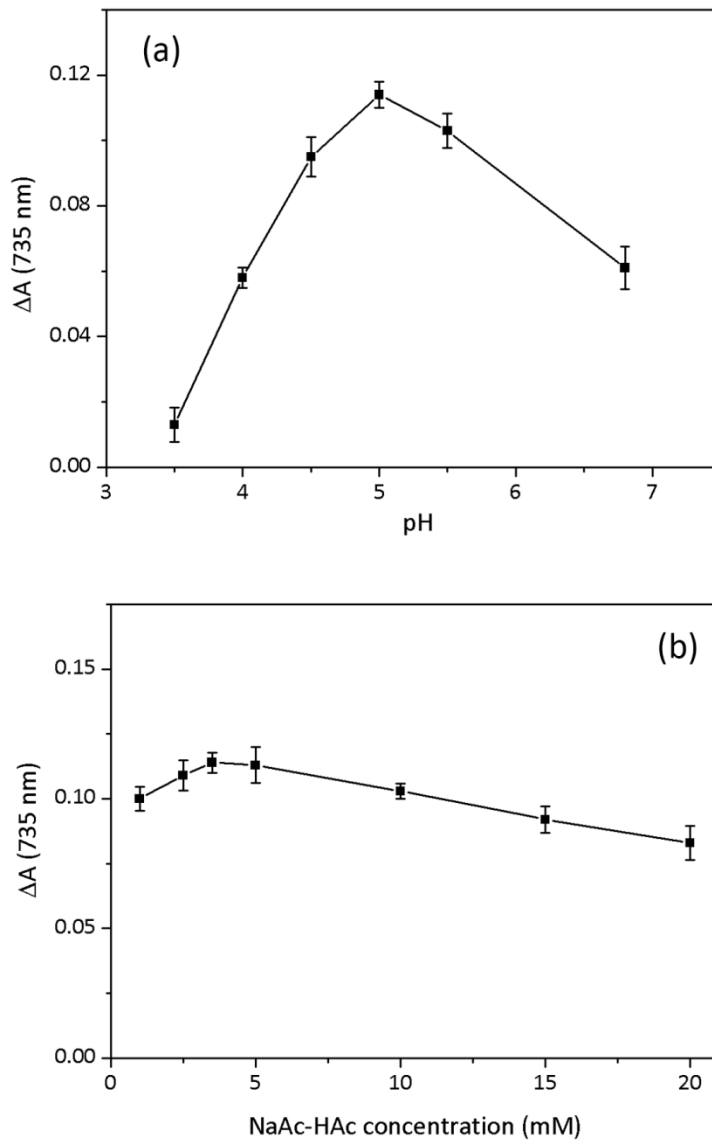


Figure S2 Effects of pH (a) and NaAc-HAc concentrations (b) on the absorbance variations (ΔA) of present aptasensor for acetamiprid detection. Error bars shown represent the standard error derived from three repeated measurements.

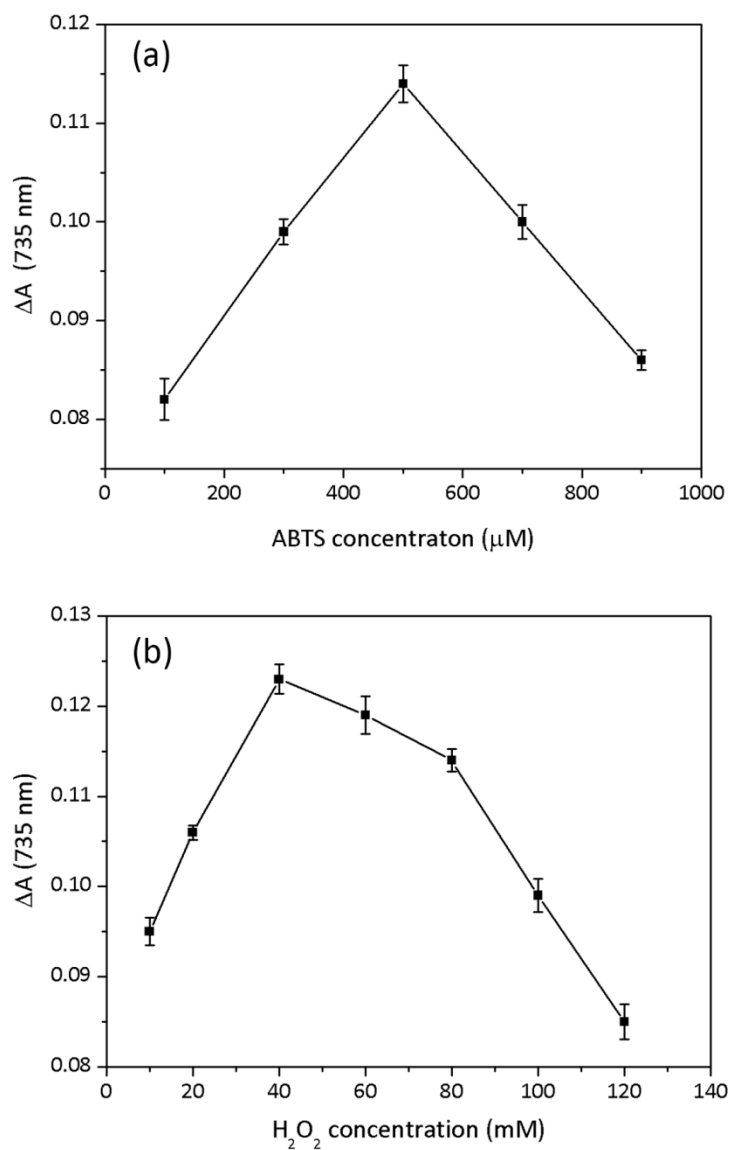


Figure S3 Effect of the concentration of ABTS (a) and H₂O₂ (b) on the absorbance variations (ΔA) of present aptasensor for acetamiprid detection. Error bars shown represent the standard error derived from three repeated measurements.

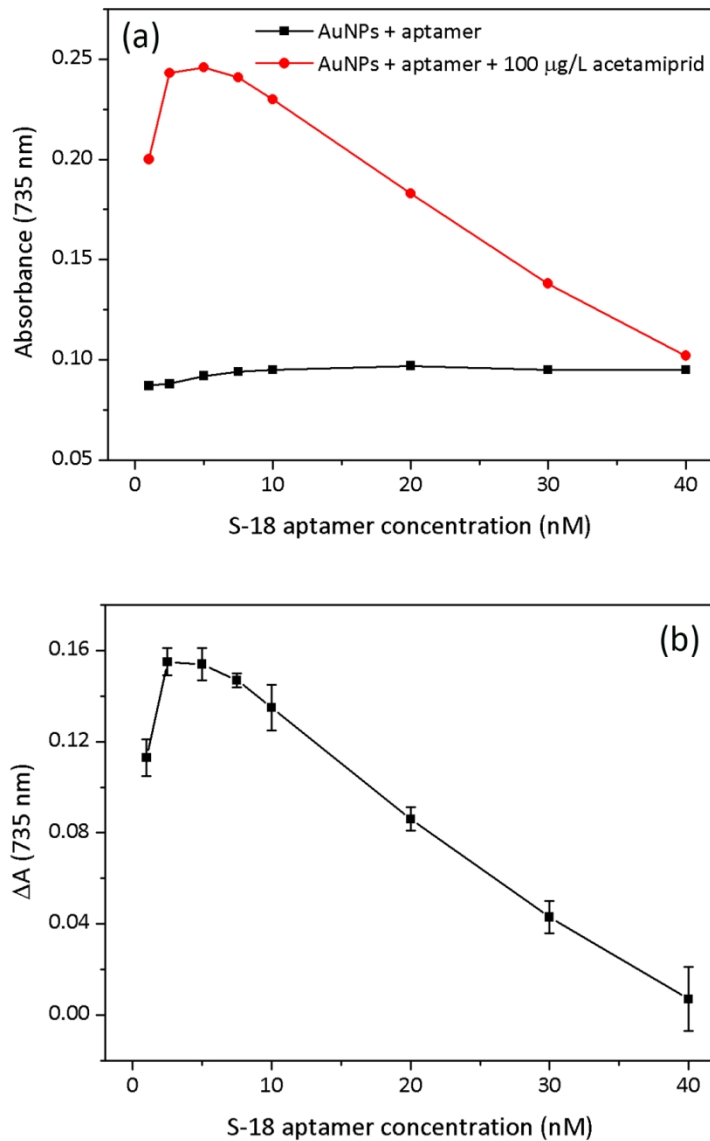


Figure S4 (a) The absorbance value of sensing solutions with the increasing concentration of S-18 aptamer before and after adding 100 µg/L acetamidrid; (b) Effect of S-18 aptamer concentrations on the present aptasensor for acetamidrid detection. Error bars shown represent the standard error derived from three repeated measurements.

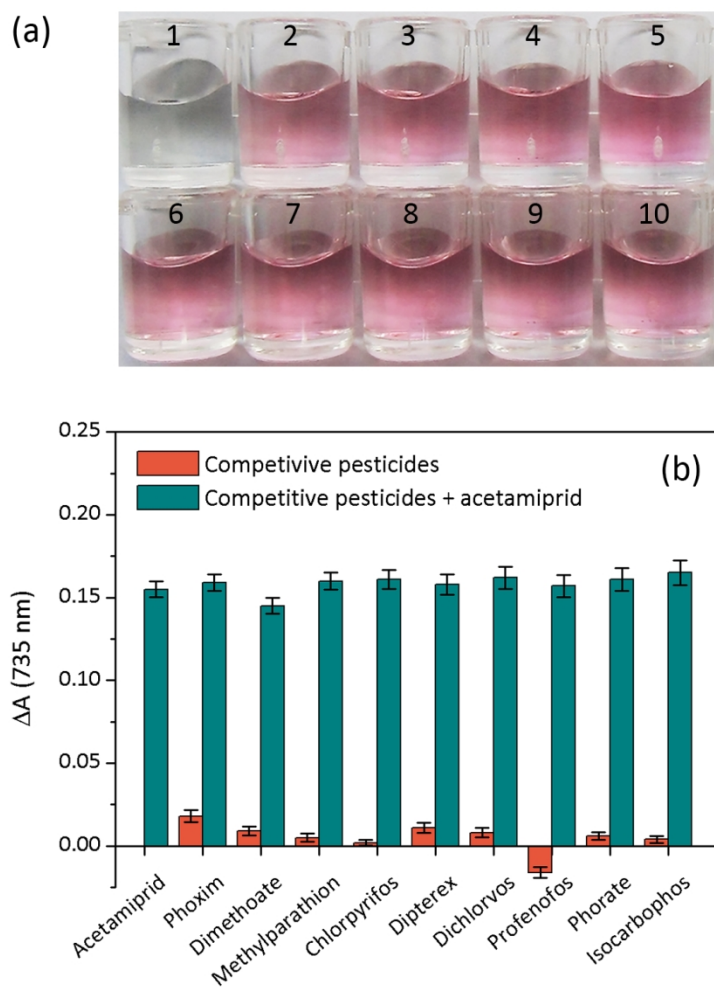


Figure S5 (a) Visual color changes of the sensing solutions treated with various competitive pesticides. Samples 1-10 were acetamiprid, phoxim, dimethoate, methylparathion, chlorpyrifos, dipterex, dichlorvos, profenofos, phorate and isocarbofos, respectively. (b) Selectivity of present colorimetric aptasensor for acetamiprid detection in NaAc-HAc solutions. The concentrations of competitive pesticides and acetamiprid were 100 $\mu\text{g/L}$.