Electronic Supplementary Material (ESI) for RSC Advances.

A facile label-free colorimetric aptasensor for ricin based on the peroxidase-like activity of gold nanoparticles

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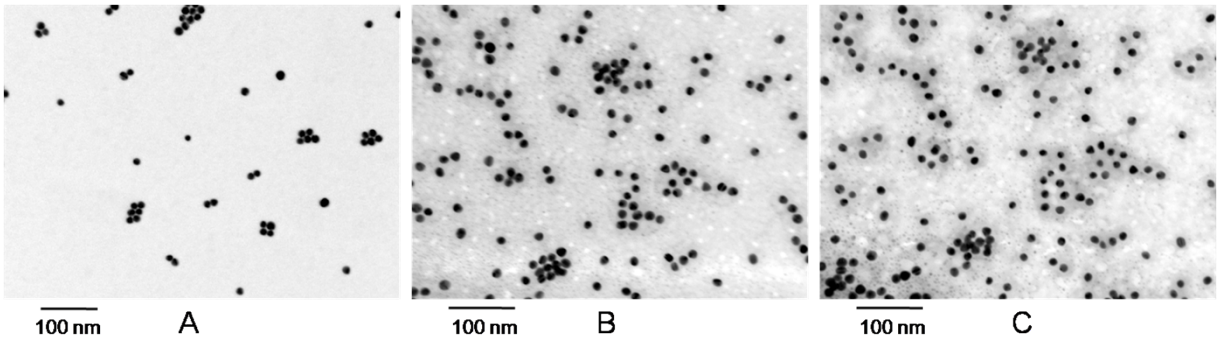

Fig. S1. TEM images of Au NPs under different conditions. (A) 2.5 nM AuNPs. (B) 2.5 nM Au NPs in the presence of 0.25 μM RBA. (C) 2.5 nM Au NPs in the presence of 0.25 μM RBA and 3 nM ricin.

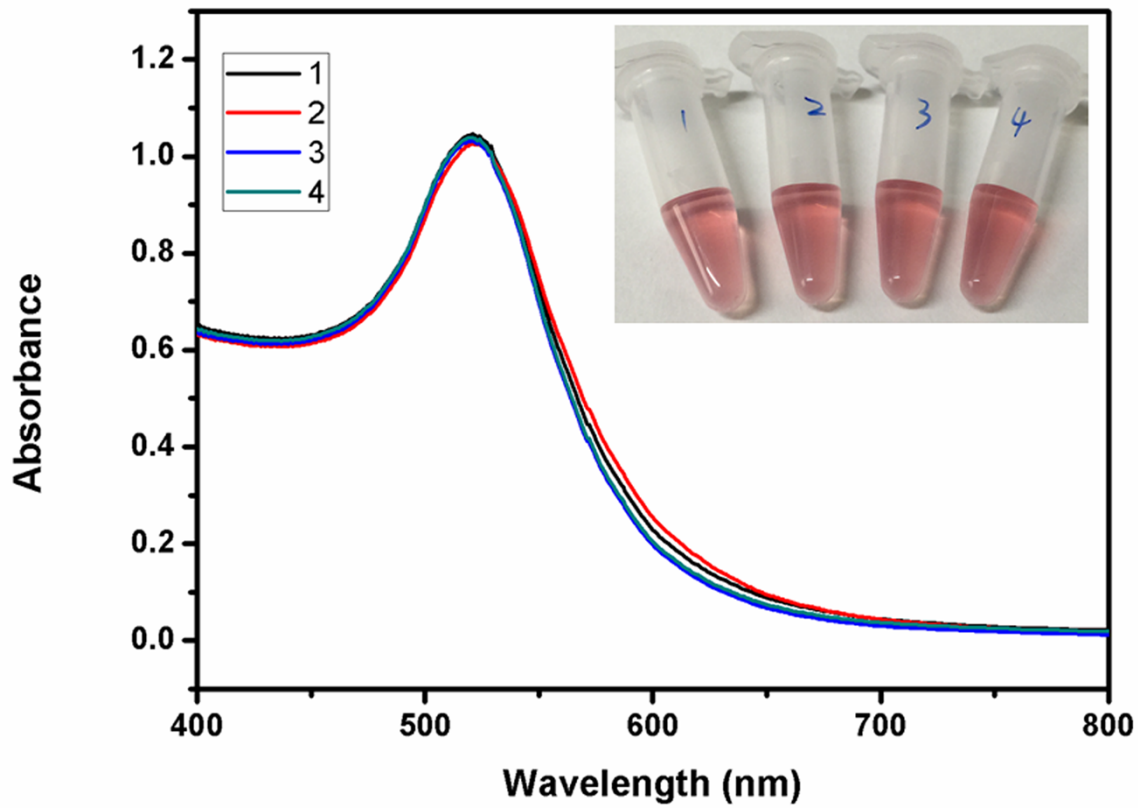

Fig. S2. UV-vis spectra of AuNPs under different conditions. (1) 2.5 nM AuNPs. (2) 2.5 nM AuNPs in the presence of 0.25 μM RBA. (3) 2.5 nM AuNPs in the presence of 0.25 μM RBA and 3 nM ricin. (4) 2.5 nM AuNPs in the presence of 3 nM ricin. Inset shows the corresponding digital images.

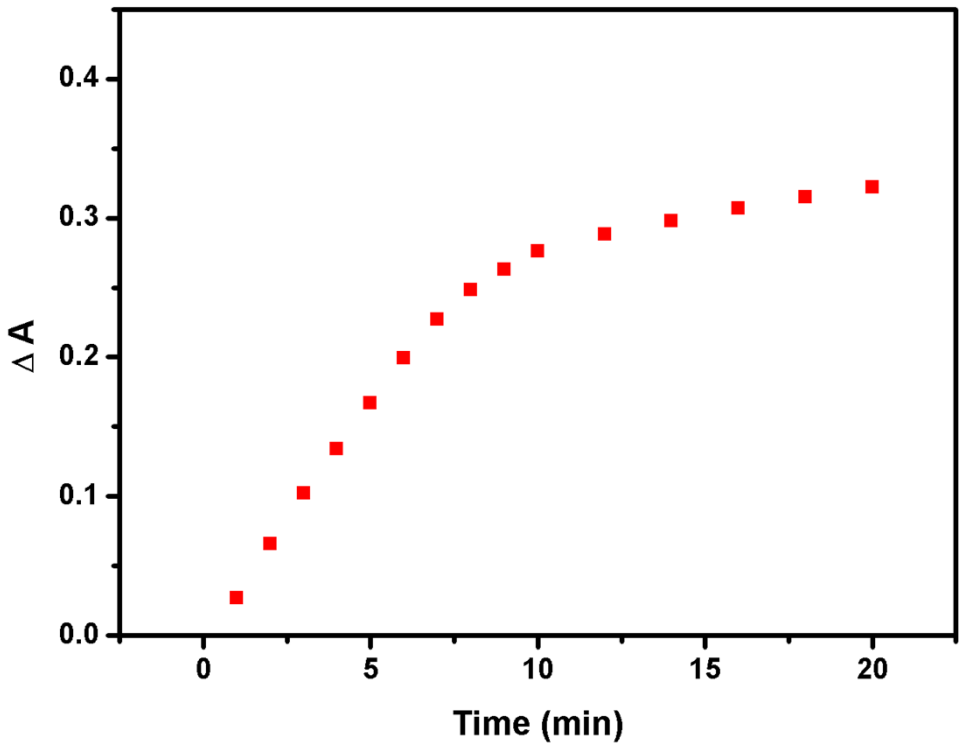

Fig. S3. Effect of the reaction time on the sensitivity of ricin detection.

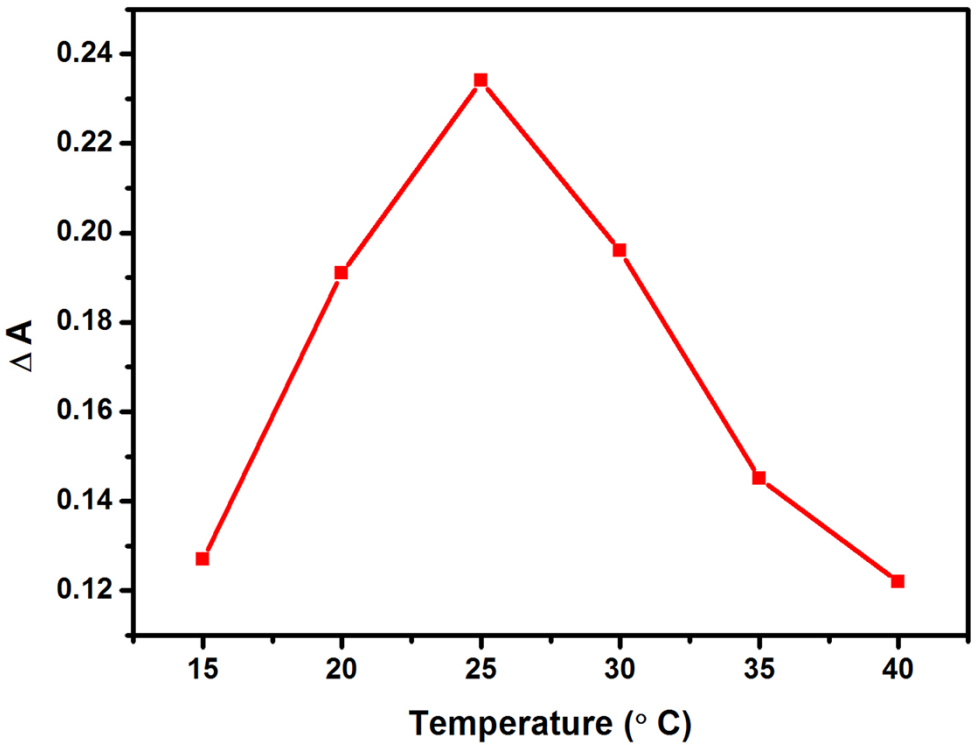

Fig. S4. Effect of the incubation temperature on the sensitivity of ricin detection.

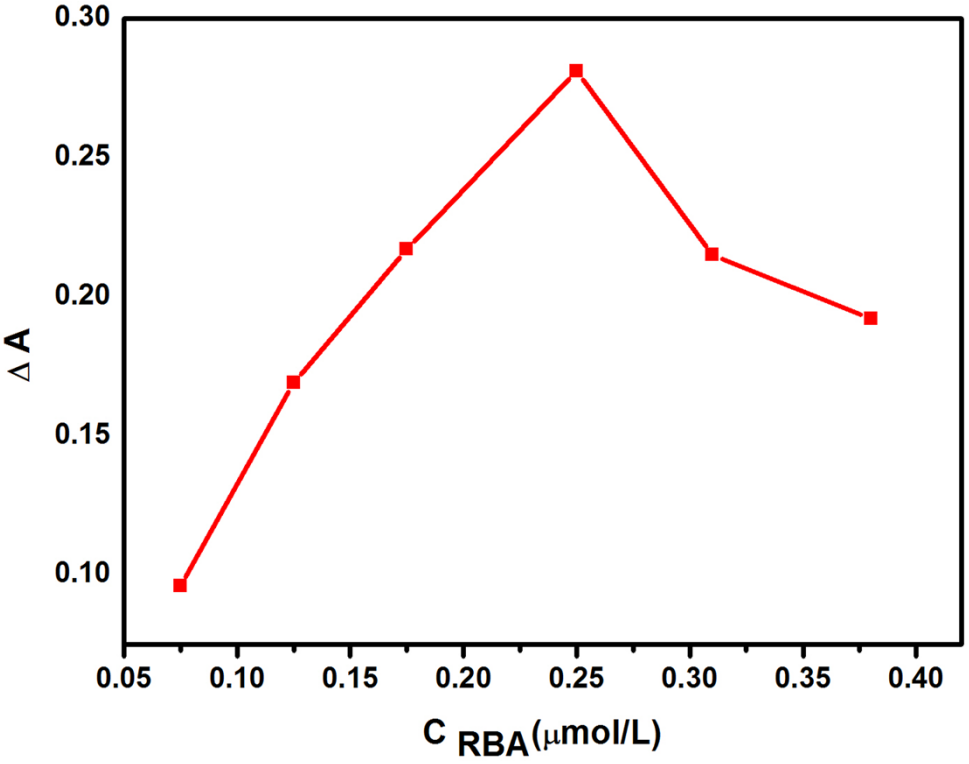

Fig. S5. Effect of aptamer concentrations on the sensitivity of ricin detection.

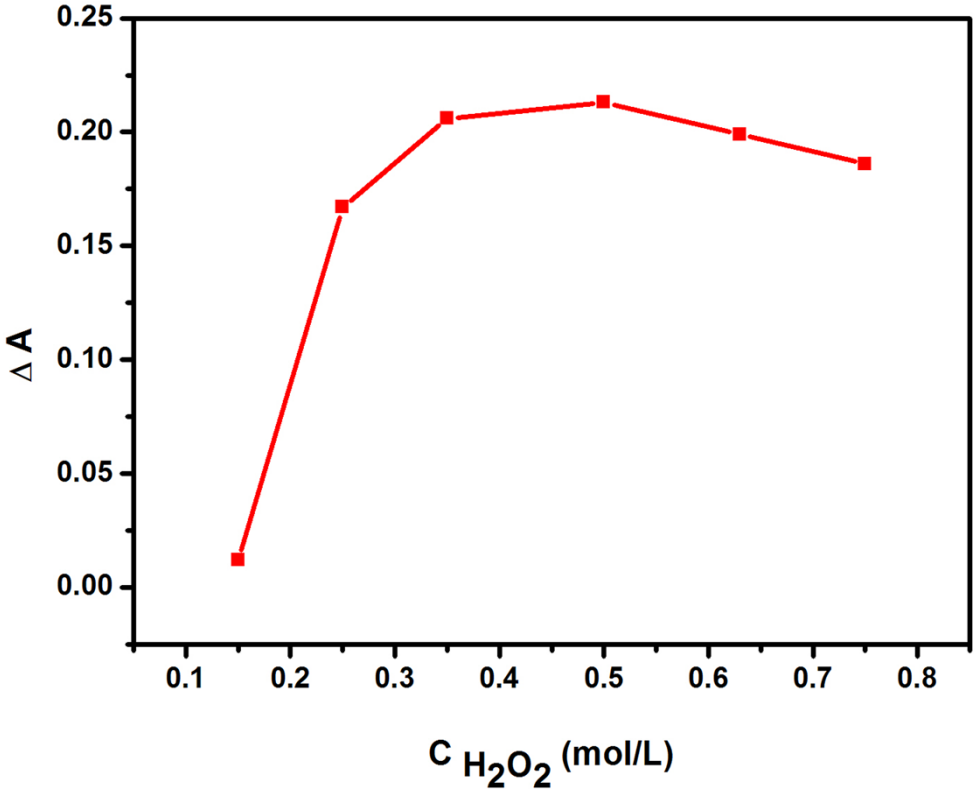

Fig. S6. Effect of H_2O_2 concentrations on the sensitivity of ricin detection.

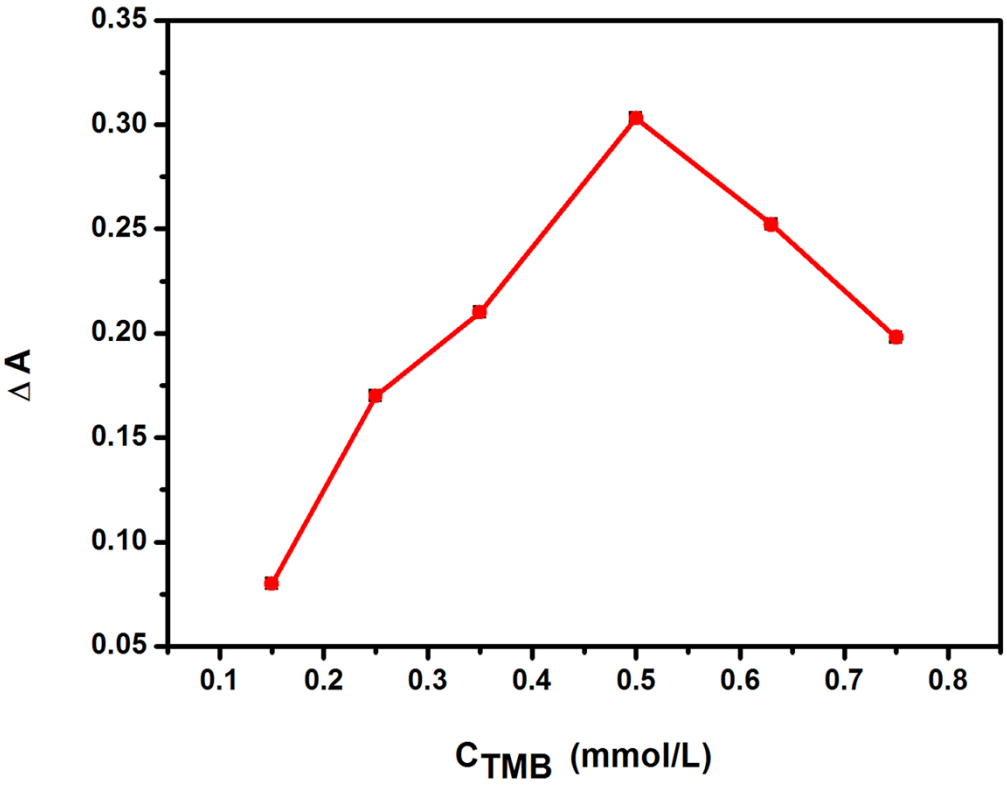

Fig. S7. Effect of TMB concentrations on the sensitivity of ricin detection.

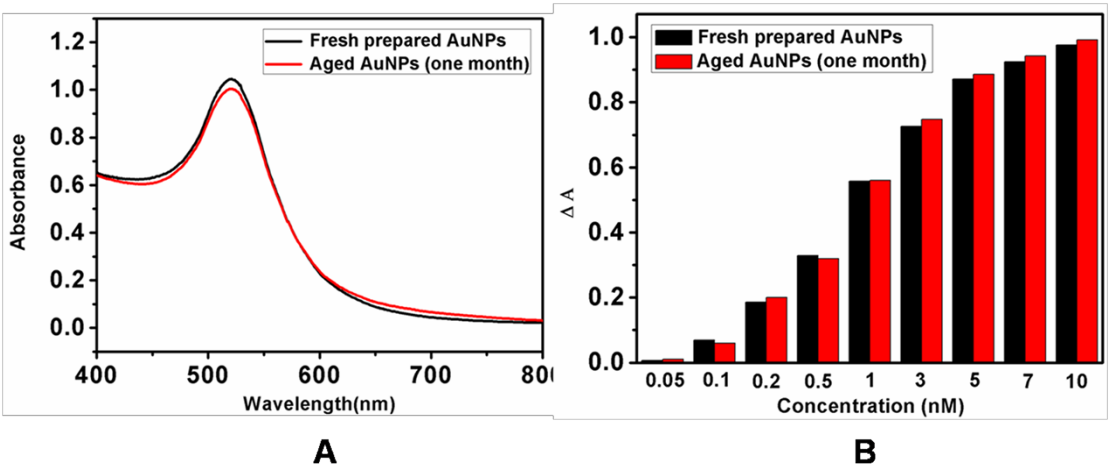

Fig. S8. (A) UV-vis spectra of fresh prepared AuNPs and aged AuNPs (one month). The concentration of fresh prepared AuNPs and aged AuNPs are 2.5 nM. (B) The sensing performance of fresh prepared AuNPs and aged AuNPs.