

Supplementary Information

Table S1. Effect of pH of phosphate buffer and NaCl/GSH concentrations on assay performance.

$\Delta A_{610}/A_{520}$	0/3	0/3.33	0/3.66	0/4	0/4.33	1/3.33
pH 6	NT **	ND *	NT **	NT **	NT **	NT **
pH 7	ND *	0.011636	ND *	0.02768	0.02773	0.001634

Notes: * ND: Color change was not detectable or too fast to allow spectrometric measurement; ** NT: Not tested.

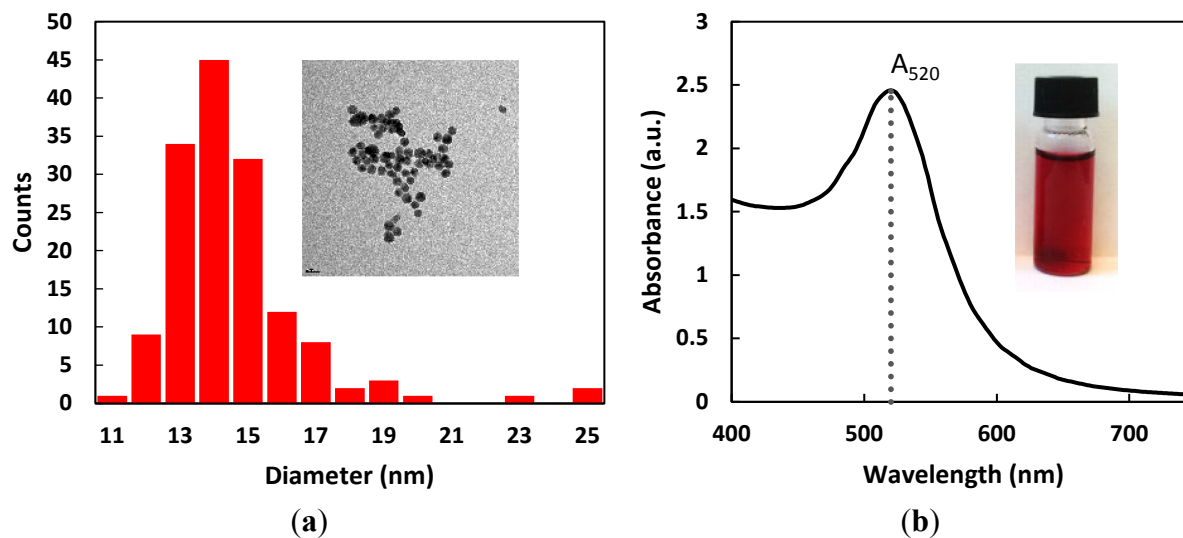


Figure S1. Characteristics of the AuNP aqueous solution: (a) size distribution and TEM image; and (b) characteristic absorbance peak at 520 nm of the solution, showing ruby-red colour.

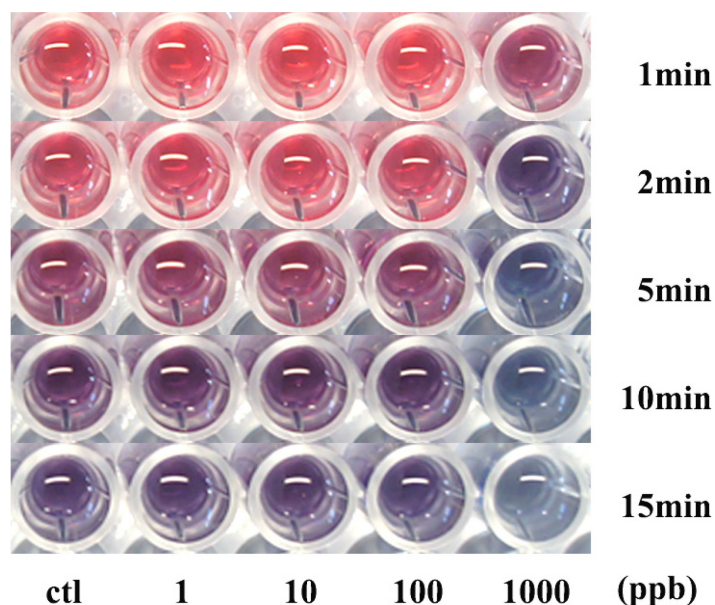


Figure S2. The color changes of the AuNP sensors upon the addition of various amount of Pb^{II} standard solution with respect to the time. The Pb^{II} concentrations in the figure were final concentrations in the assay solutions.

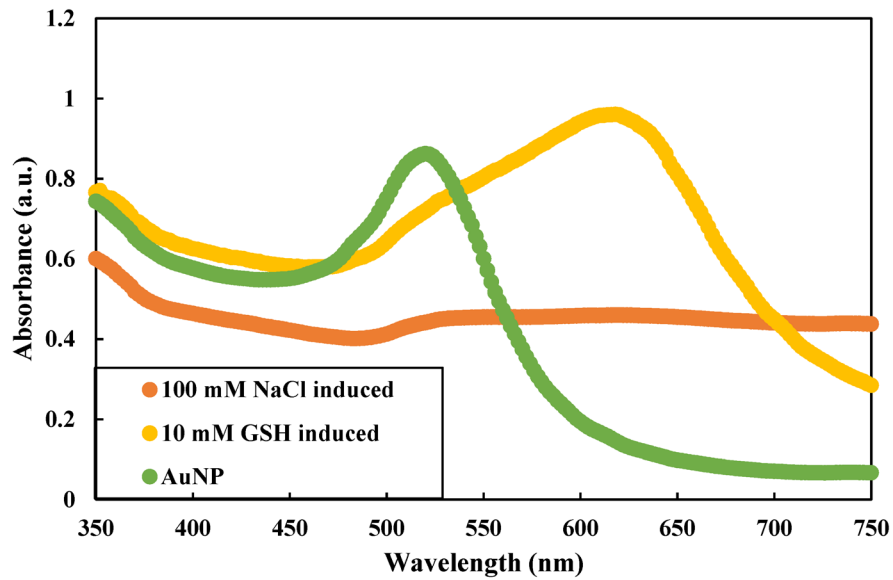


Figure S3. Spectrum of NaCl and GSH induced aggregation of AuNP solutions versus AuNP solution without a background electrolyte.

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