Electronic Supplementary Information (ESI)

Rapid and selective detection of aluminum ion using 1,2,3-triazole-4,5-dicarboxylic acid-functionalized gold nanoparticle-based colorimetric sensor

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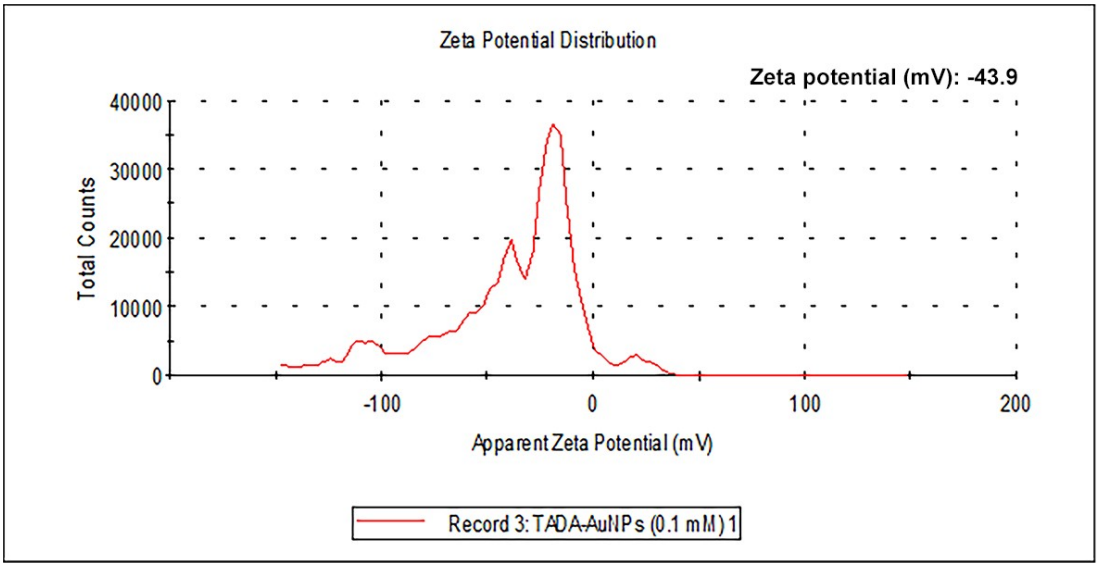

Fig. S1 Zeta potential diagram of TADA-AuNPs (0.1 mM) when pH=6.3.

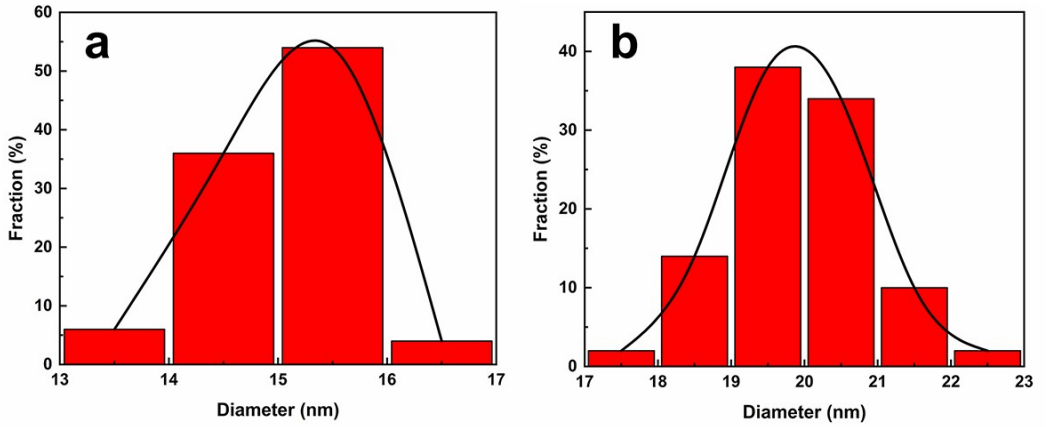

Fig. S2 TEM particle size distribution diagram of TADA-AuNPs with Na3Ct/HAuCl4 molar ratios of 6.4:1 and 12.8:1 (50 particles are randomly selected for measurement).

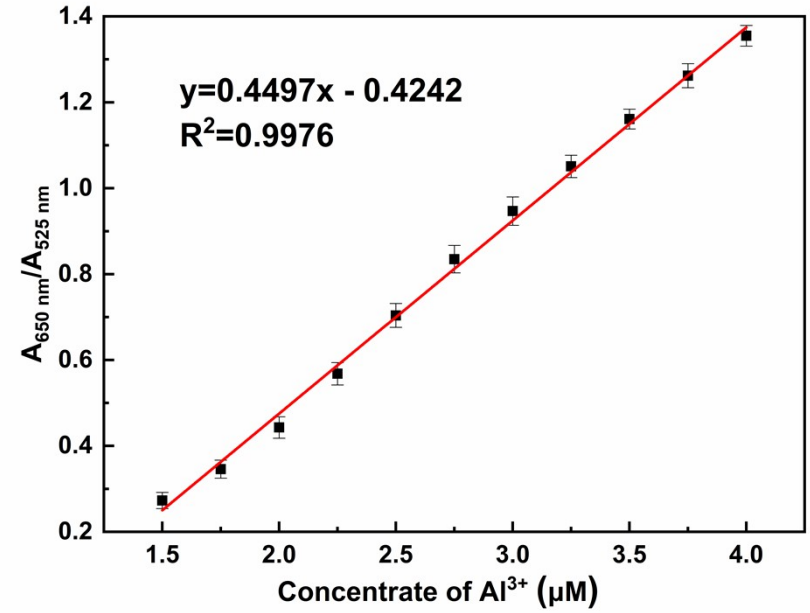

Fig. S3 The standard curve line of TADA-AuNPs in presence of different concentrations of Al^{3+} (1.5-4.0 μM). The detection limit (DL) of Al^{3+} by TADA-AuNPs was determined from the following equation: DL=3σ/S, σ is the standard deviation of the blank solution, S is the slope of the standard curve line. DL=3×0.002249/0.4497=15 nM.

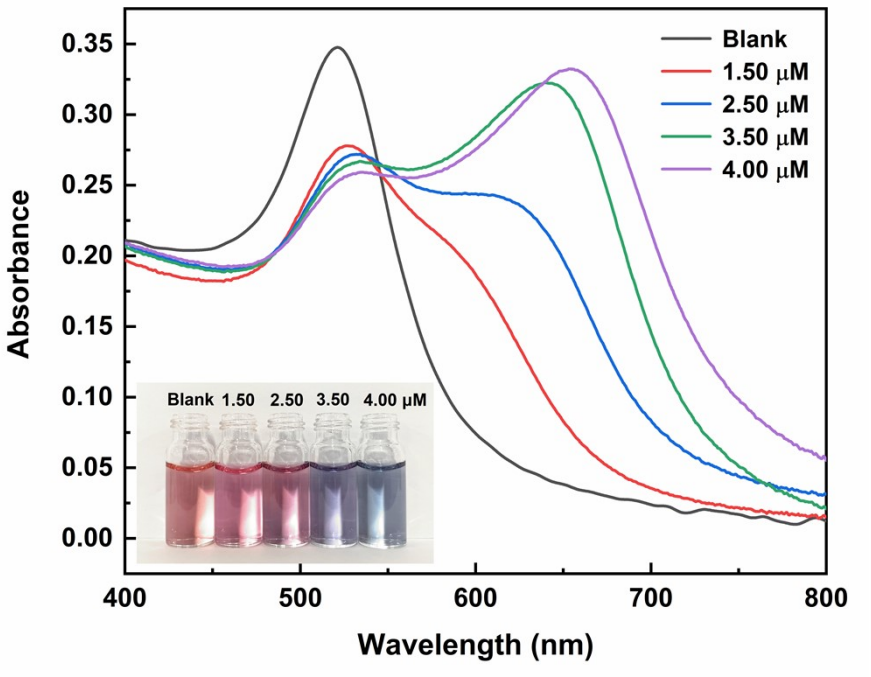

Fig. S4 UV-Vis spectrum and photo (inset) of actual river water sample spiked with Al^{3+} (1.50, 2.50, 3.50, 4.00 μM) detection.