Supporting Information

Control Over Surface DNA Density on Gold Nanoparticles Allows Selective and Sensitive Detection of Mercury(II)

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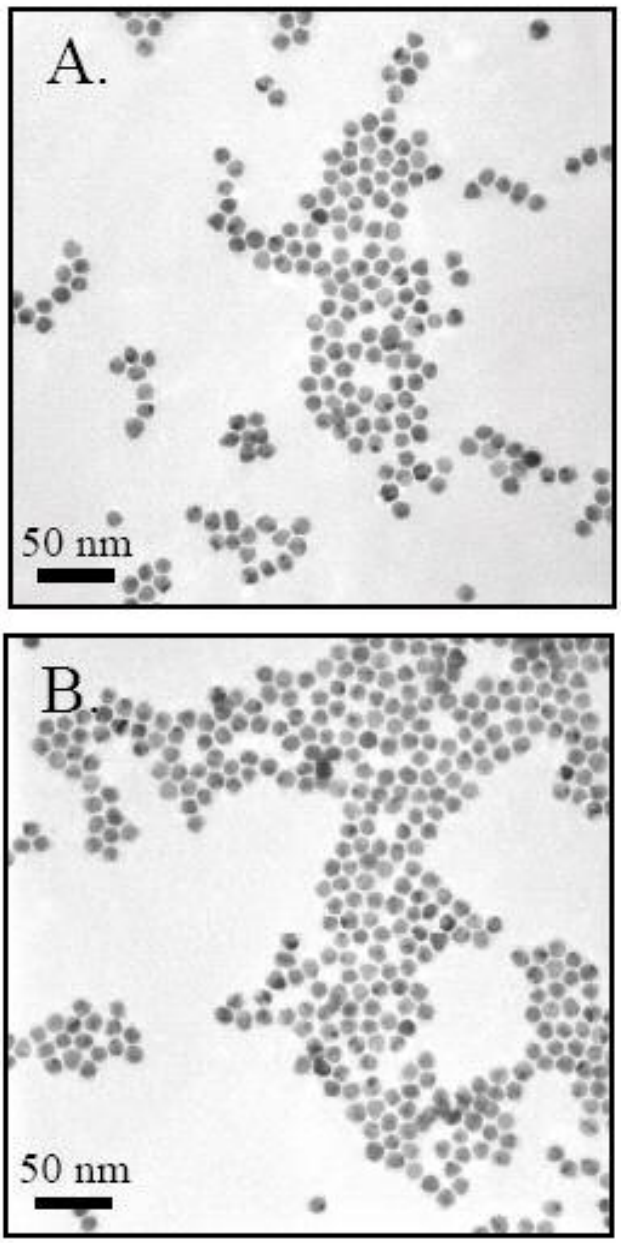

Figure S1. TEM images of 25 mM Tris-HCl (pH 8.2) solution containing (A) Au NPs and (B) DNA–Au NPs.

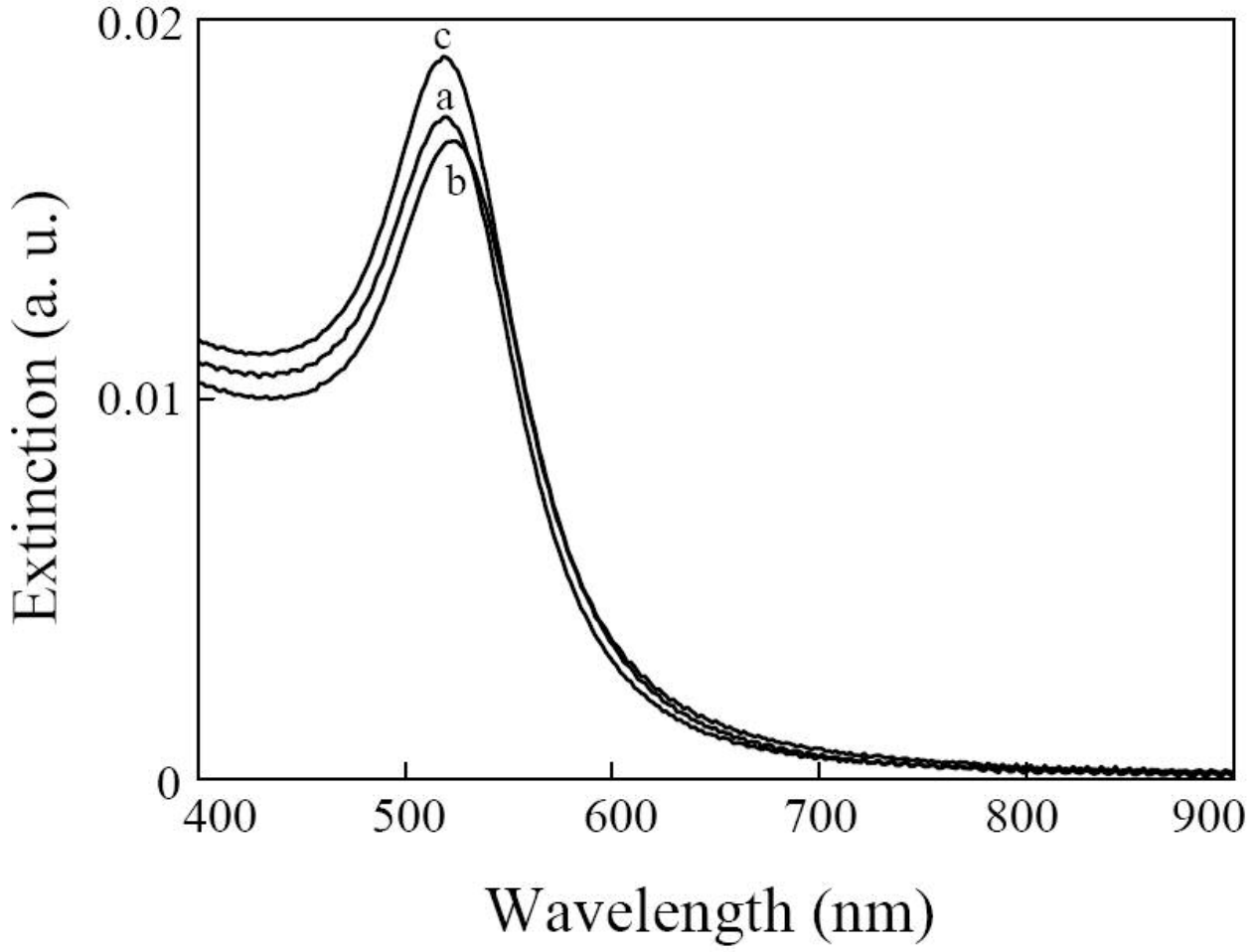

Figure S2. UV–Vis absorbance spectra of solutions containing (a) Au NPs and (b, c) DNA–Au NPs in the (b) absence and (c) presence of Hg^{2+} (5.0 μM). All other conditions were the same as those described in Figure 1.

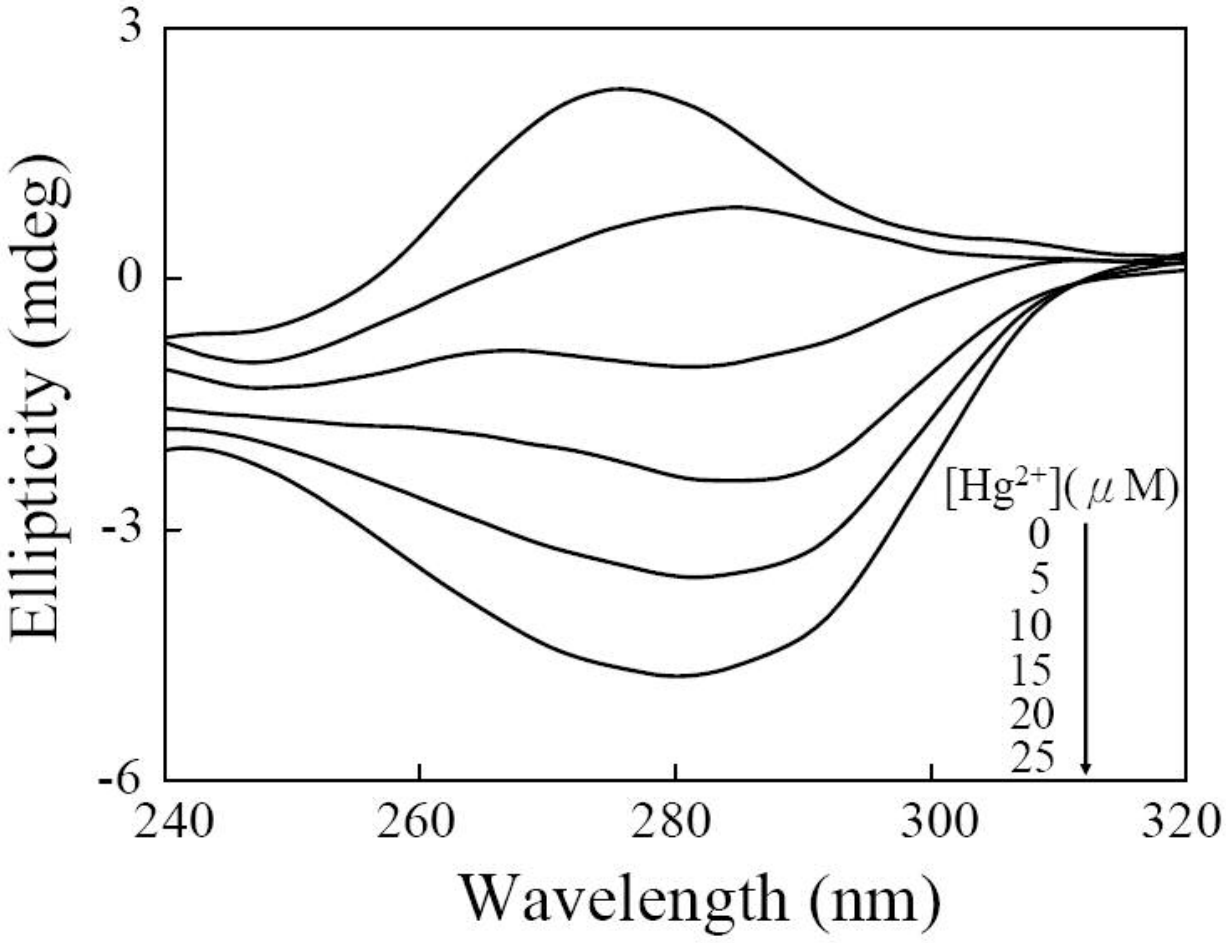

Figure S3. Ellipicity versus Hg^{2+} ion concentration (0, 5, 10, 15, 20 and 25 μM). Each solution contained 500 nM probe DNA in 25 mM Tris-HCl at pH 8.2.

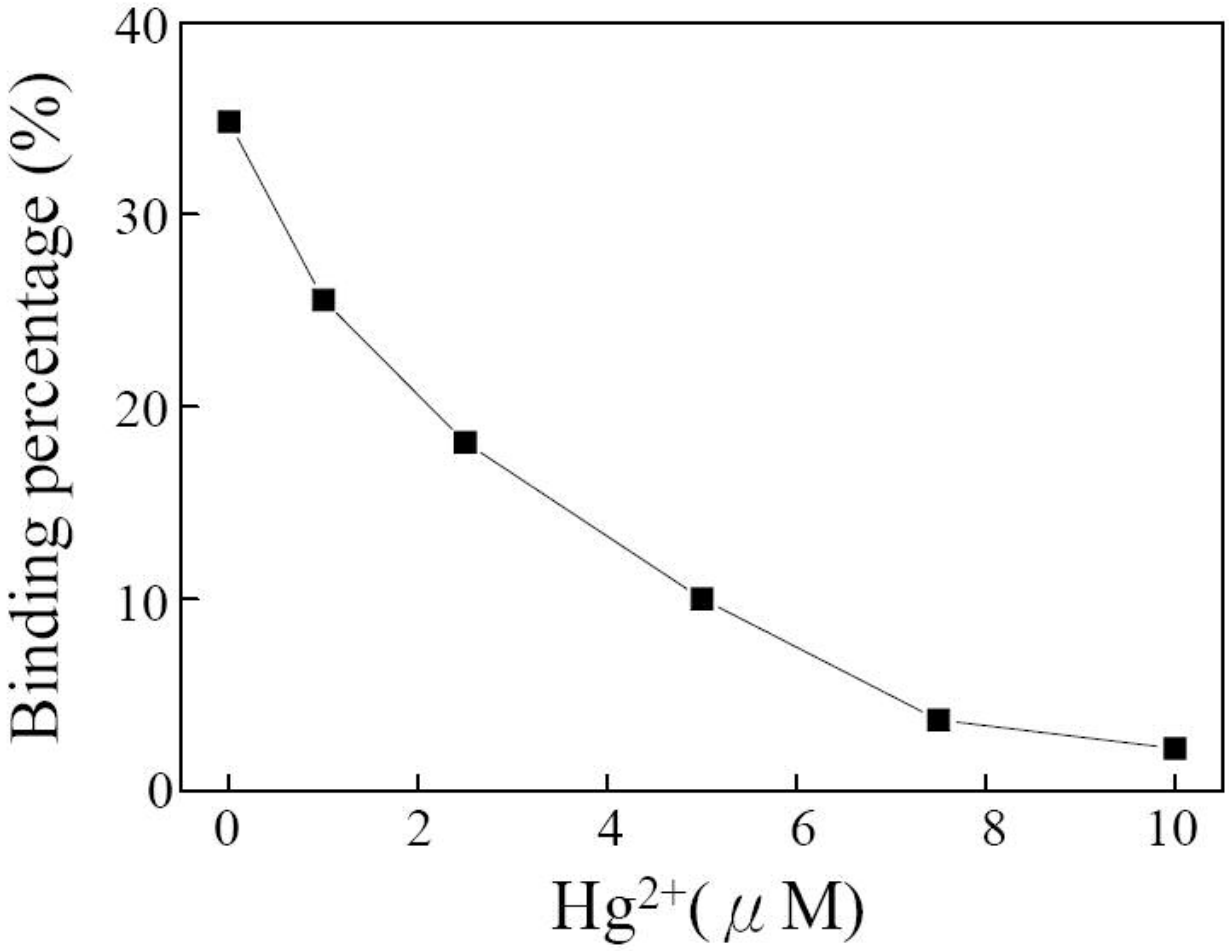

Figure S4. Plot of binding percentage versus Hg^{2+} concentration. Binding percentage is defined as the percentage of the amount of DNA bound to Au NPs over total DNA molecules added to the solution.

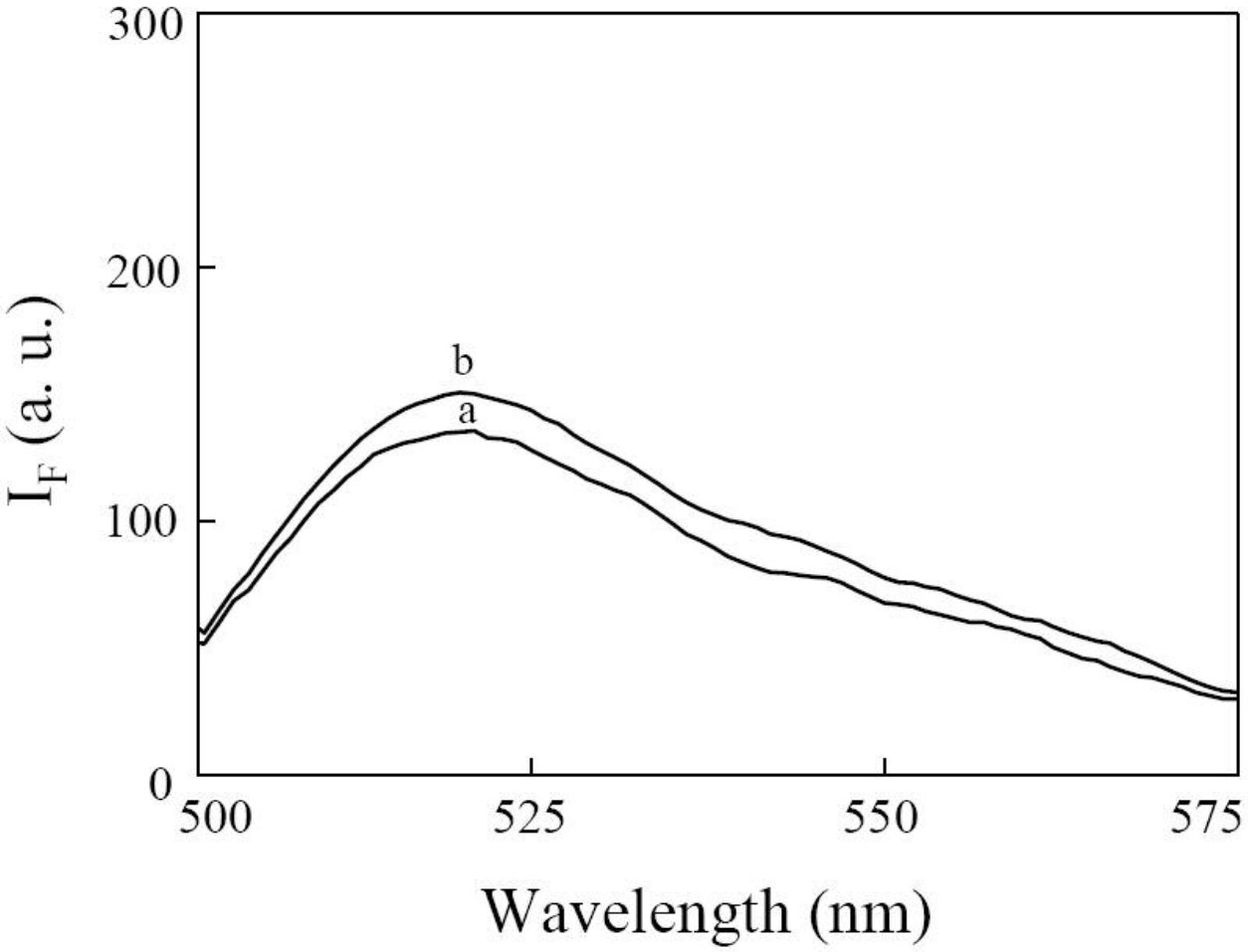

Figure S5. Fluorescence response of OliGreen–control DNA–Au NPs (0.75 nM) in the (a) absence and (b) presence of Hg^{2+} (5.0 μM). All other conditions were the same as those described in Figure 1.

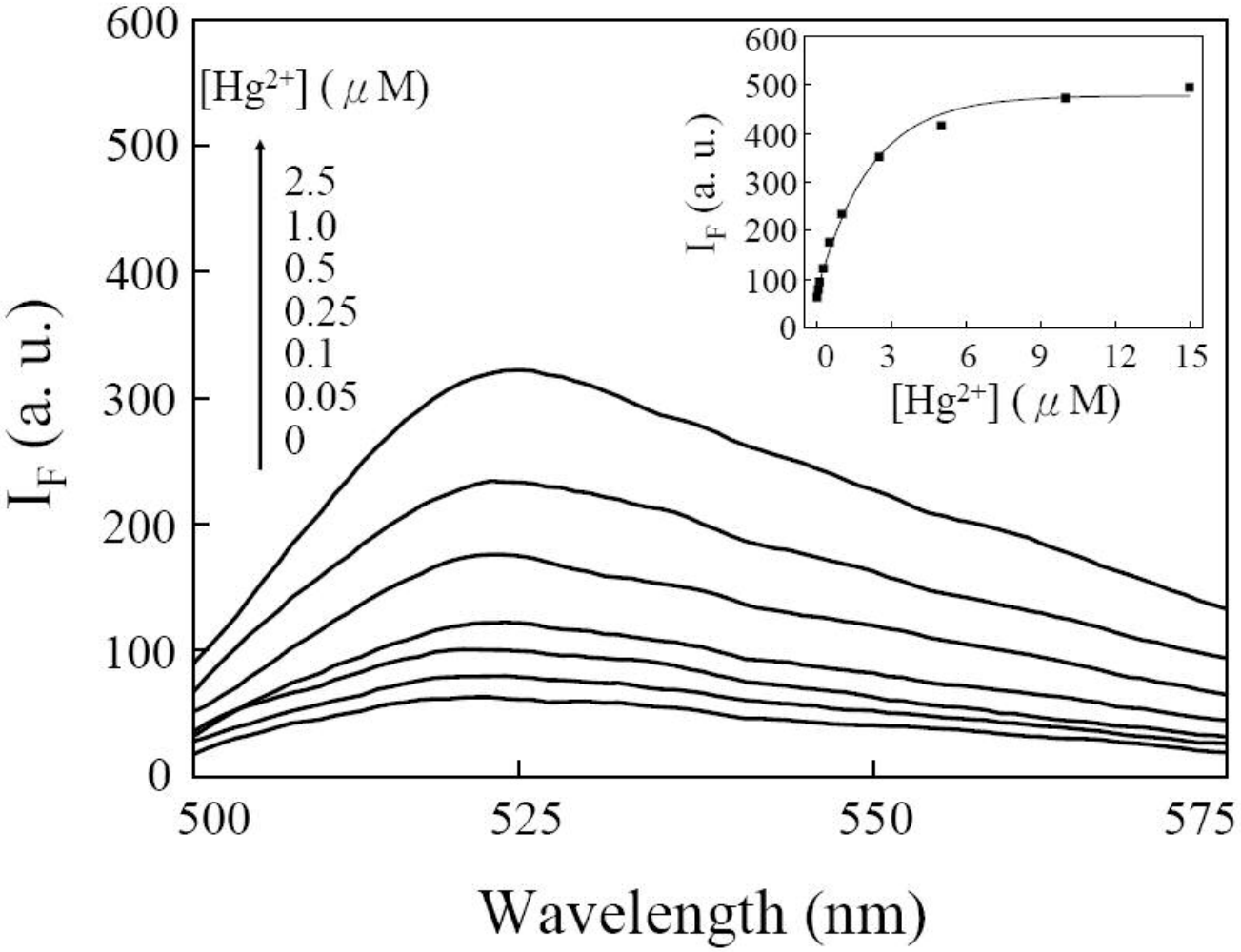

Figure S6. Fluorescence response of DNA–Au NPs (0.75 nM) upon addition of Hg^{2+} ions (0, 0.05, 0.1, 0.25, 0.5, 1.0, and 2.5 μM) in a matrix of pond water. Inset: Plot of fluorescence emission intensity (525 nm) versus Hg^{2+} concentration. All other conditions were the same as those described in Figure 1.