Supporting Information
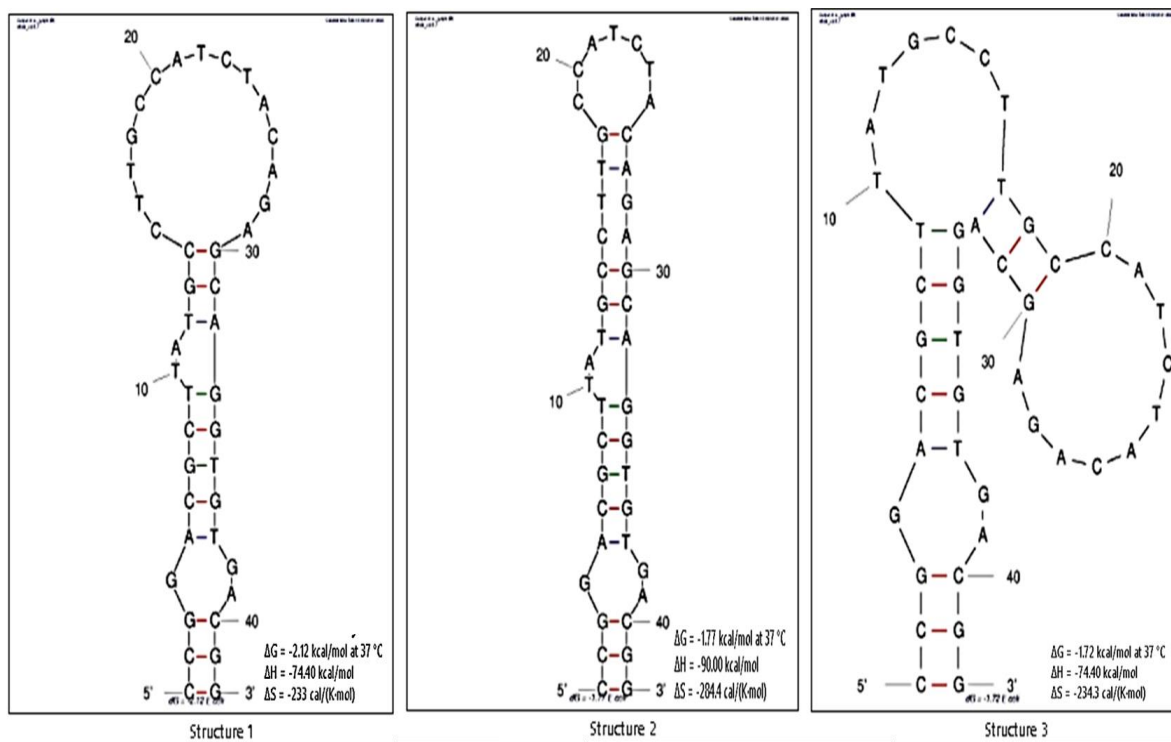
for

New application of bimetallic Ag/Pt nanoplates in a colorimetric biosensor for specific detection of *E. coli* in water

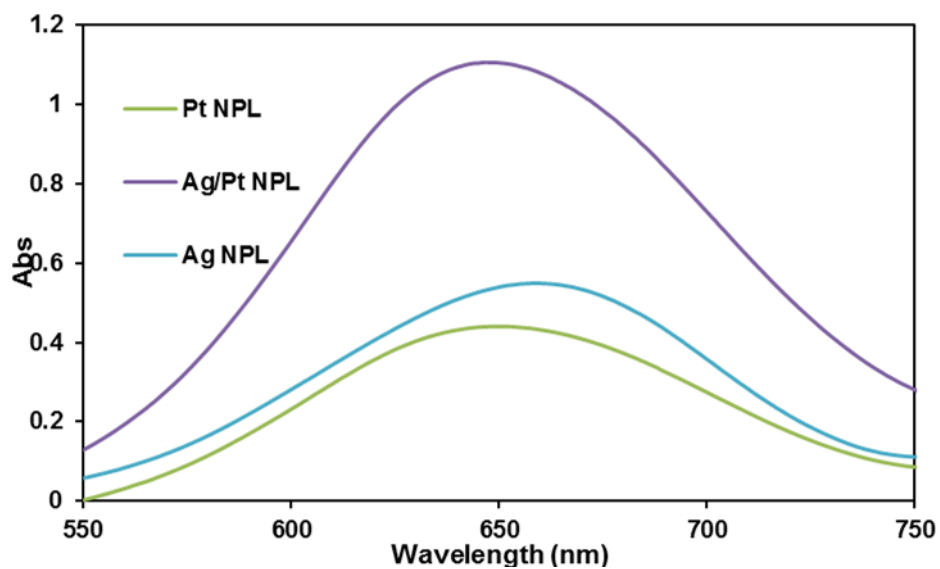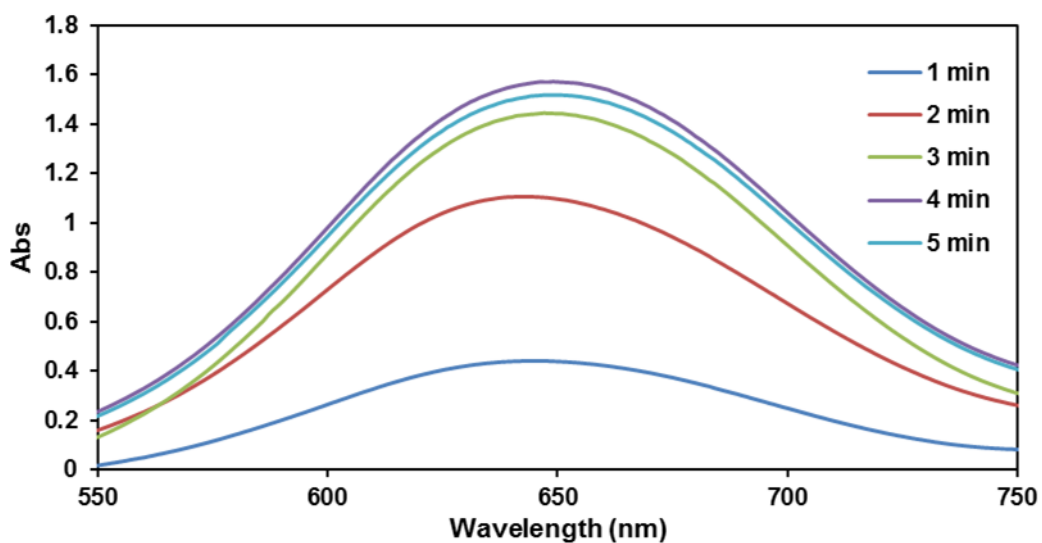Azam Bagheri Pebdeni, Mohammad N. AL-Baiati and Morteza Hosseini

Additional figures and tables

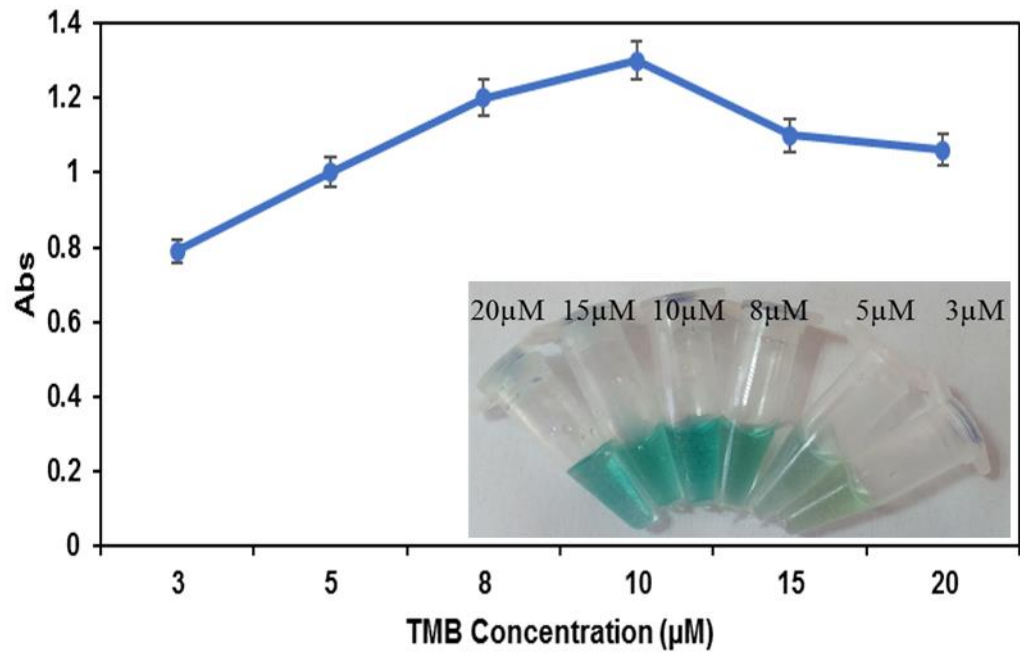**Figure S1:** The predicted secondary structure of the sequence of specific aptamers of *E. coli.*
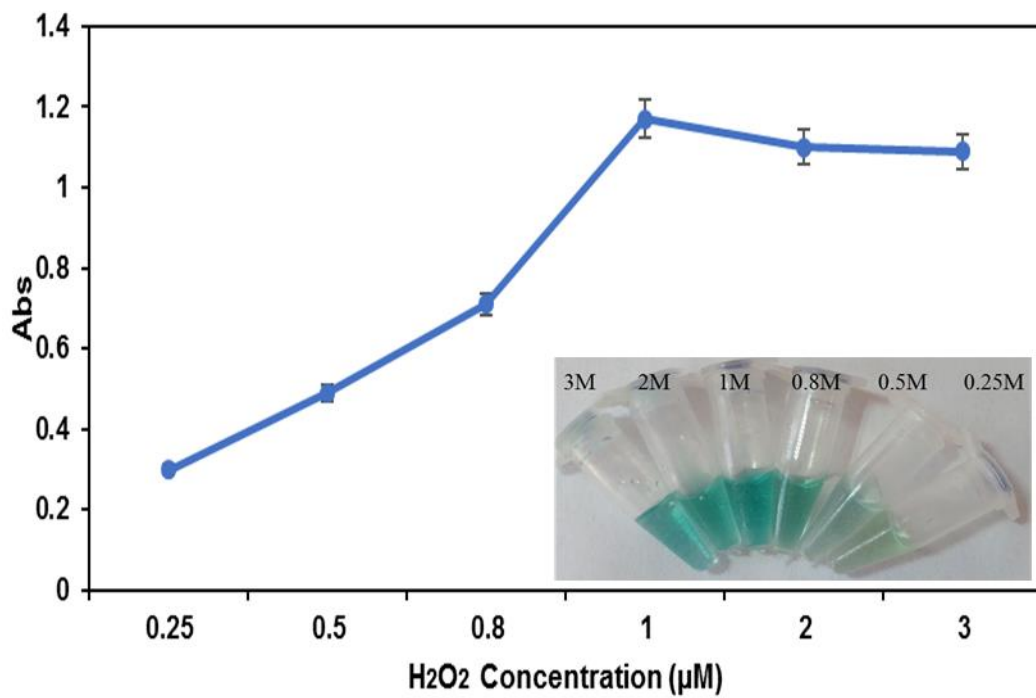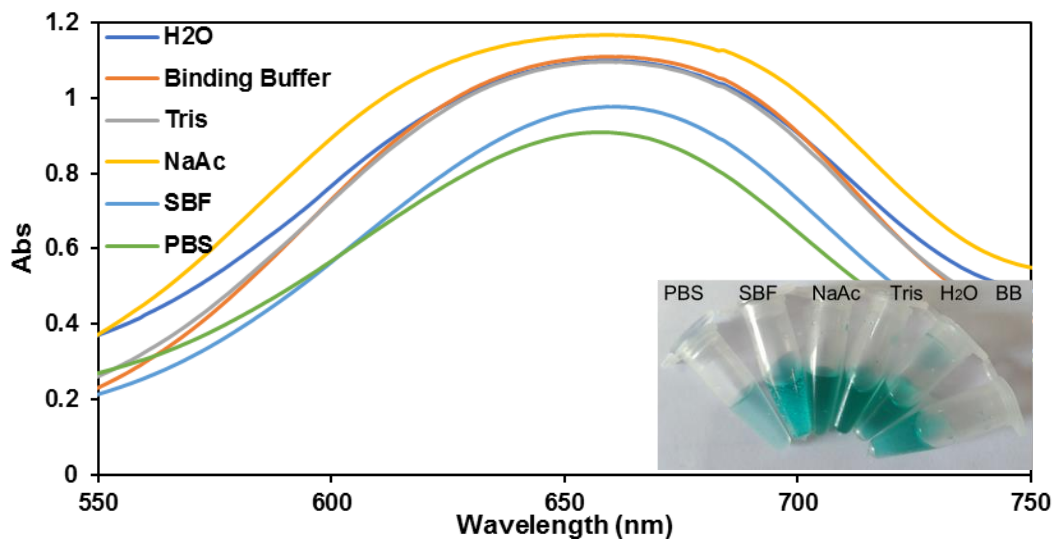
a

b

Figure S2: a) Comparison of peroxide activity of Ag NPL, Pt NPL, and Ag/Pt NPL after addition of TMB and H_2O_2. b) The peroxidase activity of Ag/Pt NPL after addition of TMB and H_2O_2.
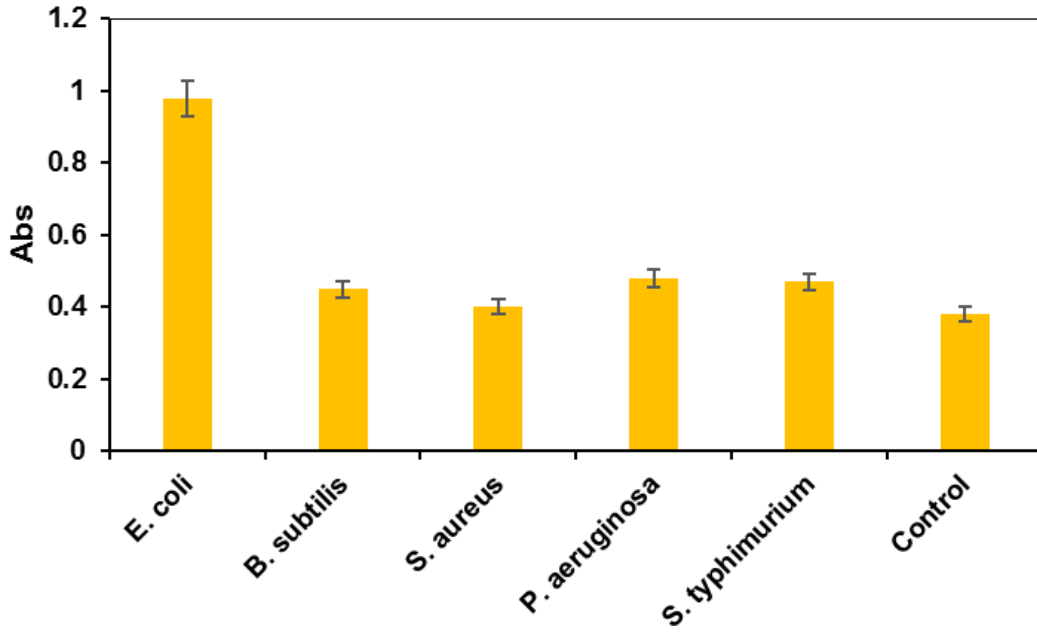
a

b

S4

c

Figure S3: Catalytic optimization analysis of Ag/Pt NPL in different concentrations of a) TMB (3, 5, 8, 10, 12 mM) (H_2O_2 = 1 M), b) H_2O_2 concentration (0.5, 1, 2, 3 M) (TMB = 10 µM). c) Stability of peroxide-like activity of NPL in different buffers.

Figure S4: The selectivity of the aptamer-NPL by the same concentration of different bacteria (10^8 CFU·mL^{-1}).

Table S1: Analytical results of different concentration of *E. coli* in drinking water.

Sample	Spiked concentration (CFU·mL^{-1})	Measured concentration (CFU·mL^{-1})	Recovery (%)	RSD (n = 3, %)
Tap water	1×10^7	0.95×10^7	95	2.3
Tap water	1×10^5	0.94×10^5	94	3.7
Tap water	1×10^3	103×10^3	103	1.9