

Supplementary Material

Aptamer-Facilitated Design of Gold Nanoparticle-Based Logic Gates for Cyromazine and Melamine Detection in Milk

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1. Experimental

1.1. Preparation of AuNPs

The trisodium citrate reduction method was used to prepare AuNPs. 100 mL of 0.01% (w/w) HAuCl₄ solution was heated to boiling for 2 min, and 1mL of 1% sodium citrate solution was added quickly into the boiling HAuCl₄ solution with vigorous stirring. The colour of the mixed solution immediately changed from pale yellow to purple, then to bright red in the end. After the heating stopping, the solution was stirred continuously about 15 min until it cooled to room temperature. Finally, the cooled solution was diluted with 100 mL of water and stored in the refrigerator at 4 °C.

2. Results and discussion

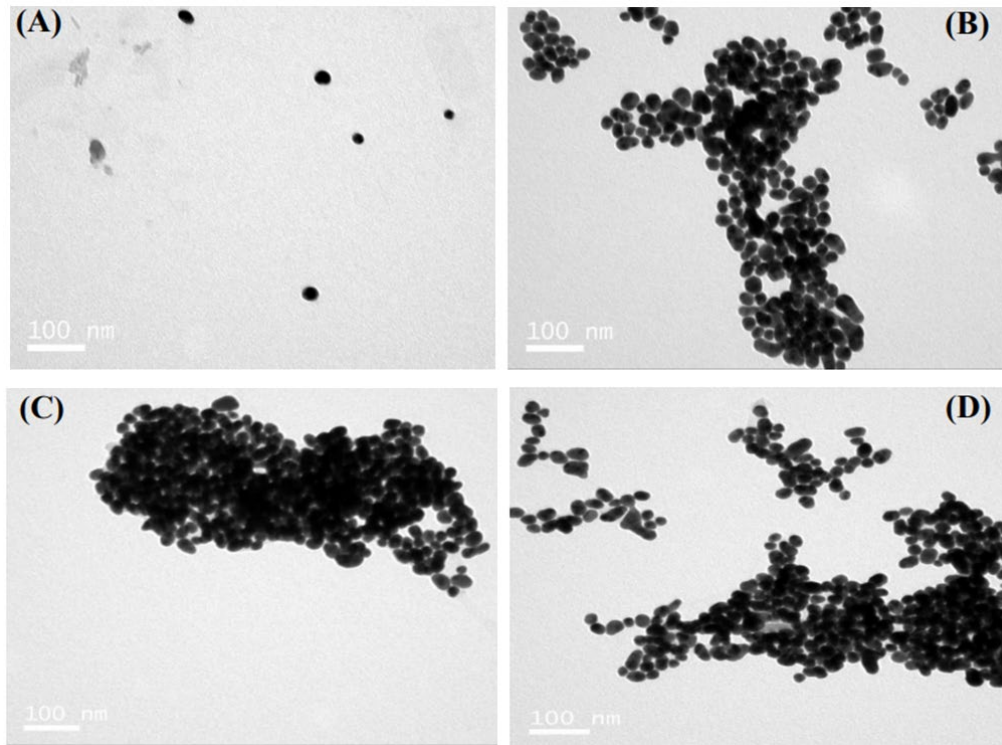


Fig.S1 Transmission electron microscopy (TEM) images of OR logic gate: (A) (0,0) ; (B) (1,0) ; (C) (0,1) (D) (1,1) .

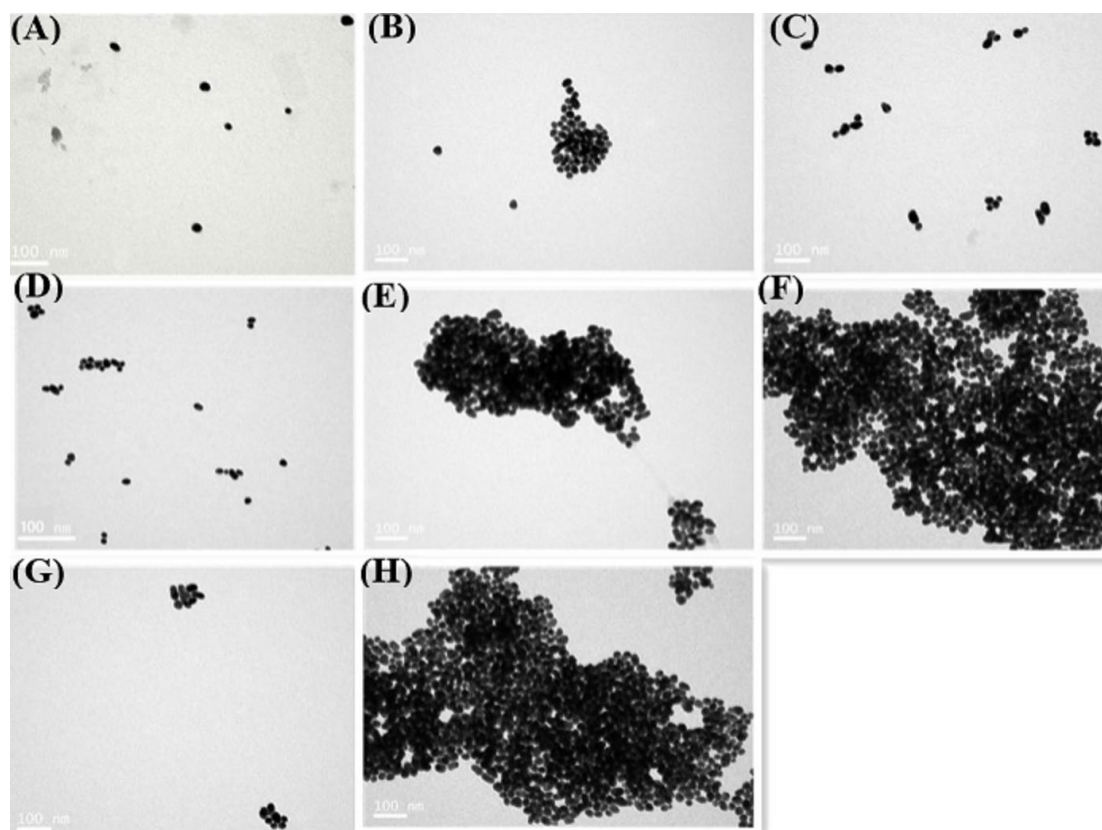


Fig.S2 Transmission electron microscopy (TEM) images of INHIBIT logic gate: A (0,0,0), B (1,0,0), C (0,1,0), D (1,1,0), E (0,0,1), F (1,0,1), G (0,1,1) and H (1,1,1)

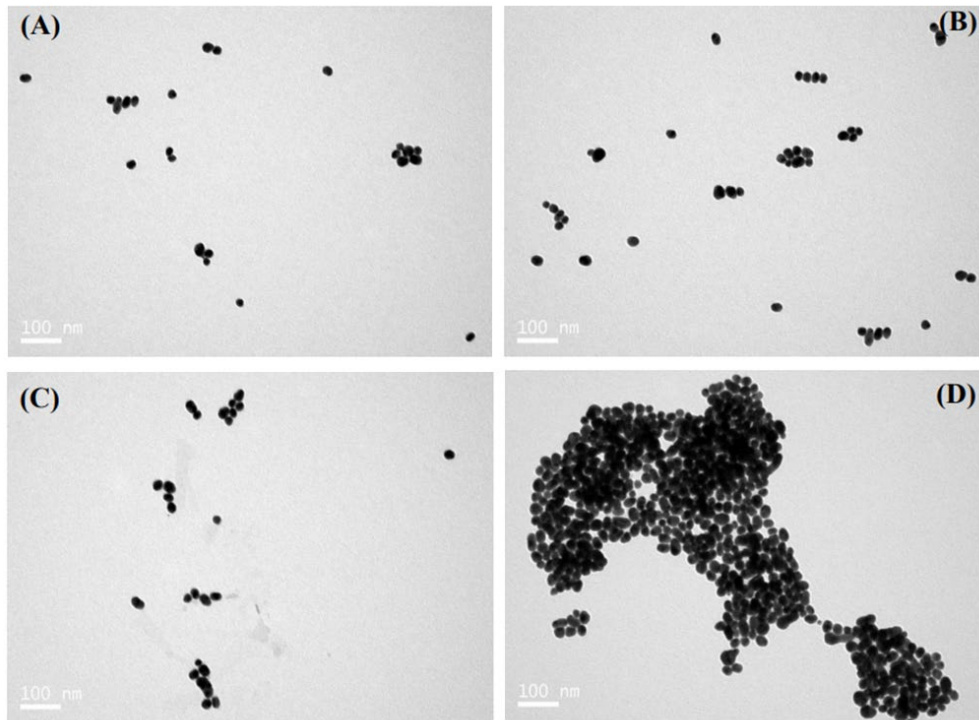


Fig.S3 Transmission electron microscopy (TEM) images of AND logic gate: (A) (0,0); (B) (1,0); (C) (0,1) (D) (1,1).

Table S1. Application of statistical analysis by SPSS

n	Mean	Std.Deviation	t	df	Sig
3	0.1978	0.004	-1.089	2	0.390
3	0.3114	0.01	1.705	2	0.230
3	0.5103	0.03	0.612	2	0.603
3	1.116	0.1	1.436	2	0.288