Supplementary Material

Cu_2O/hemin-GO nanozyme with aptamer-enhanced peroxidase-mimic activity for colorimetric detection of kanamycin in milk

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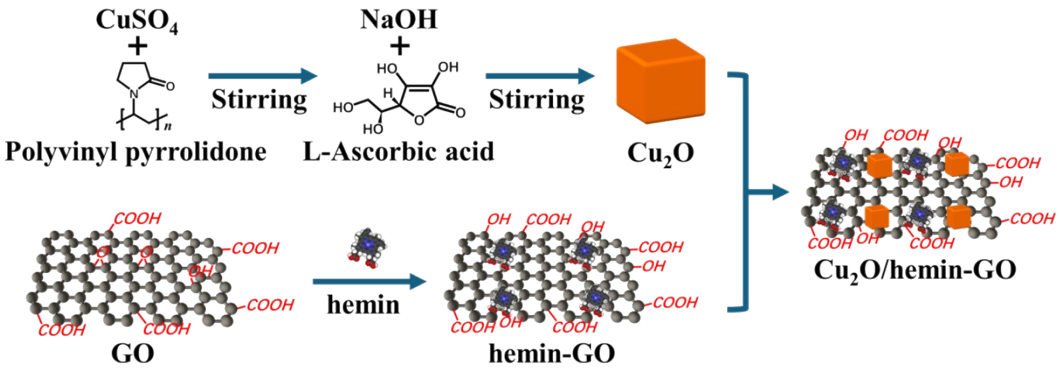

Figure S1. The preparation process of the Cu_2O/hemin-GO nanozyme.

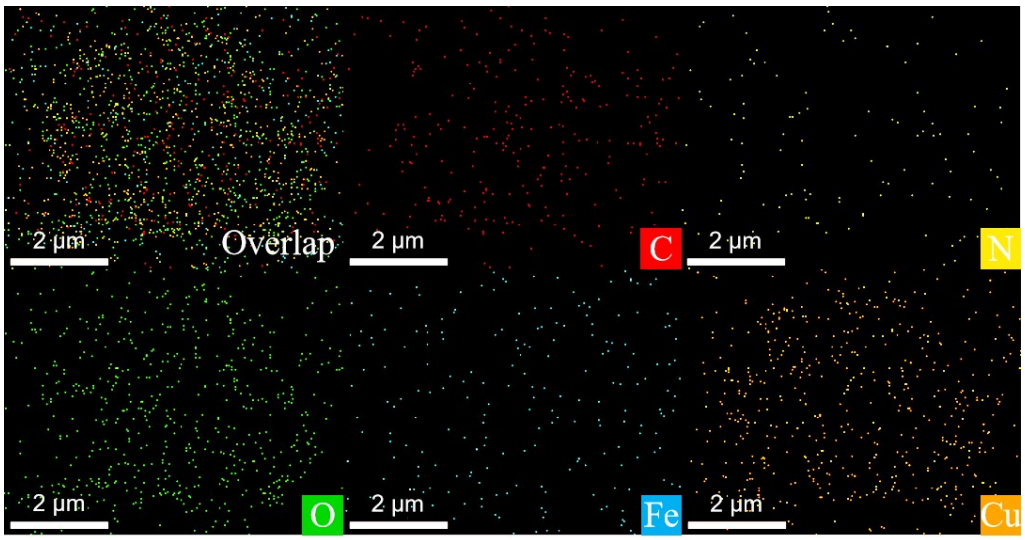

Figure S2. EDS elemental mapping of the Cu_2O/hemin-GO nanozyme. Scale bars, 2 μm.

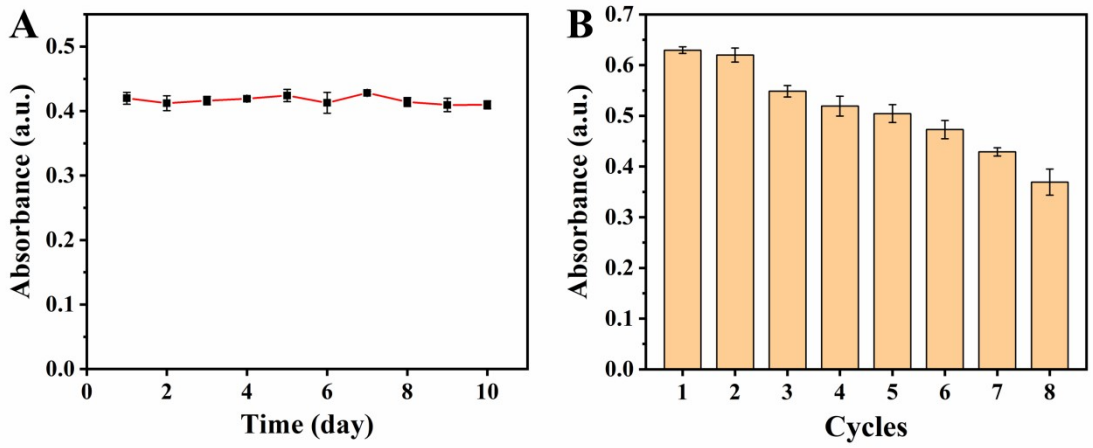

Figure S3. (A) Stability of the Cu_2O/hemin-GO nanozyme over a period of 10 days. (B) Recyclability of the Cu_2O/hemin-GO nanozyme.

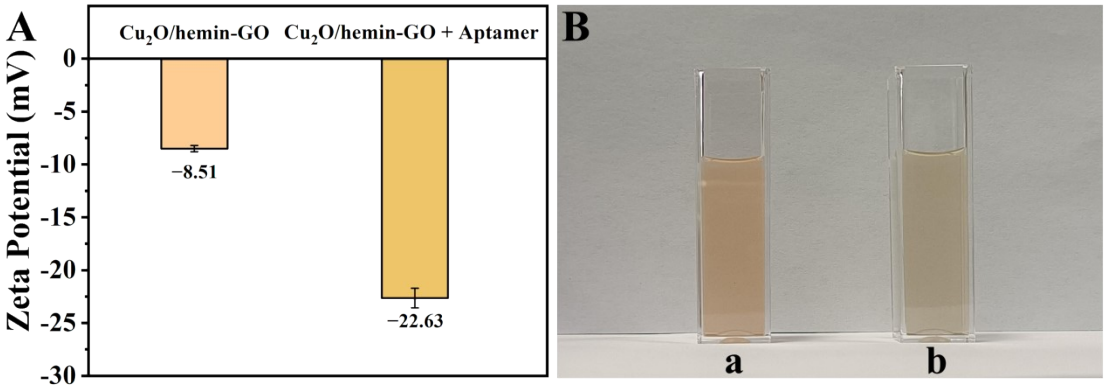

Figure S4. (A) Zeta-potential of Cu_2O/hemin-GO before and after the addition of aptamer. (B) Photograph of (a) Cu_2O/hemin-GO and (b) Cu_2O/hemin-GO-aptamer solutions.

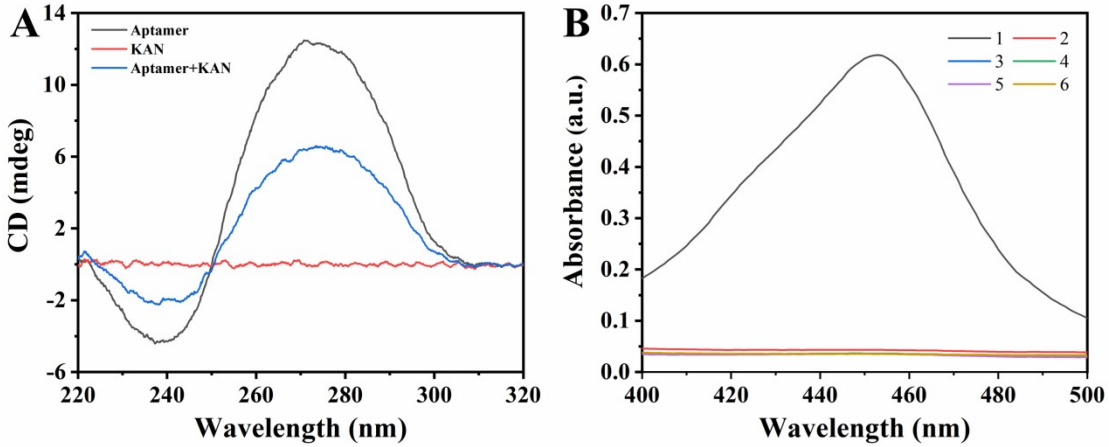

Figure S5. (A) CD spectra of Aptamer (black), KAN (red), and Aptamer + KAN (blue). (B) UV-vis absorption spectra of solutions containing various components. Sample #1: Cu_2O/hemin-GO + aptamer + H_2O_2 + TMB; Sample #2: Cu_2O/hemin-GO + TMB; Sample #3: KAN + H_2O_2 + TMB; Sample #4: aptamer + H_2O_2 + TMB; Sample #5: H_2O_2 + TMB; Sample #6: KAN + TMB. The volumes of Cu_2O/hemin-GO, aptamer (1 μM), H_2O_2, TMB, and KAN (1 μM) were 35 μL, 7.5 μL, 10 μL, 200 μL, and 10 μL, respectively.

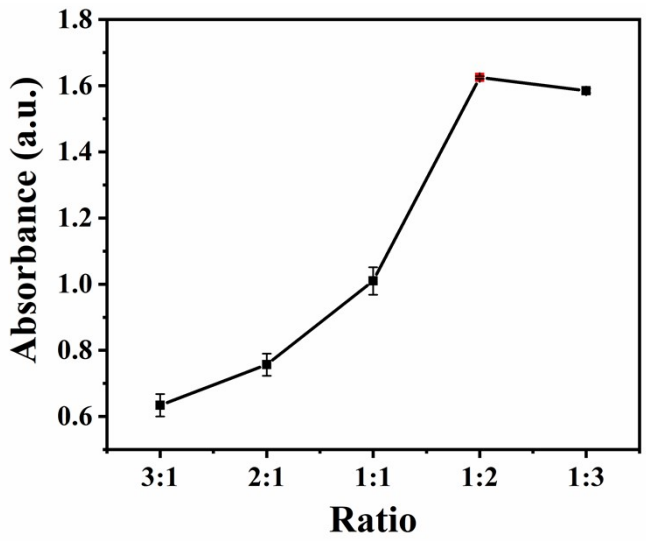

Figure S6. Influence of the ratio of hemin-GO and Cu_2O.

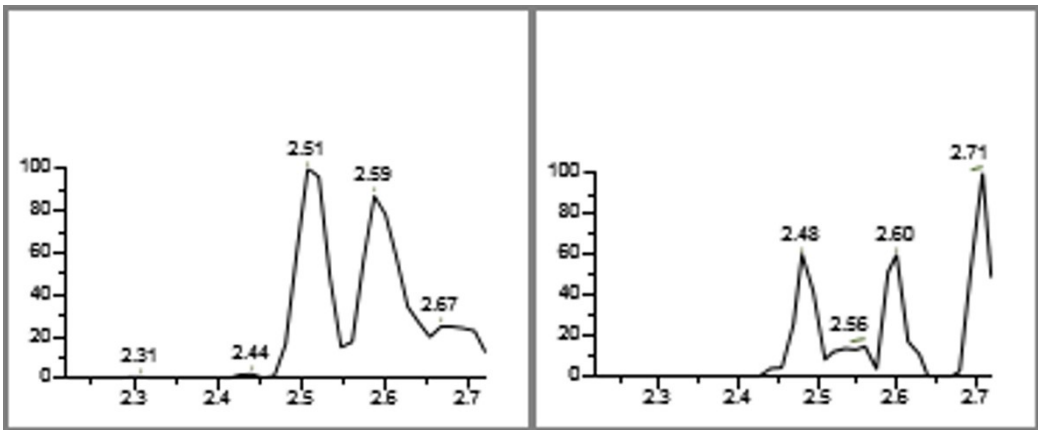

Figure S7. LC-MS detection of kanamycin in the blank milk sample.

Table S1. Detection of KAN using the developed method and LC-MS.

Sample	Added (nM)	This method			LC-MS		
		Founded (nM)	Recovery (%)	RSD (%)	Founded (nM)	Recovery (%)	RSD (%)
Milk	0.10	0.10	103.57	0.46	0.18	179.50	9.06
	1.00	1.11	110.71	3.73	0.93	93.00	12.77
	100.0	104.35	104.35	5.72	94.50	94.50	1.28
	500.0	460.27	92.05	3.37	480.55	96.11	0.14