Supplementary Material

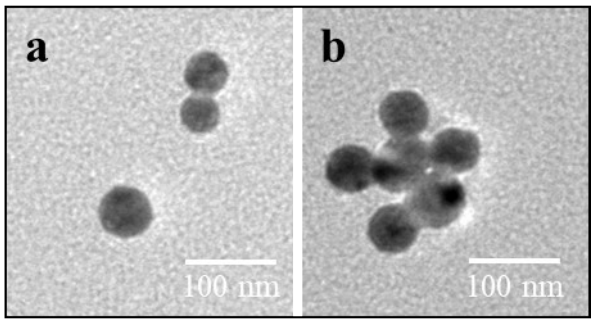

Figure S1. TEM result of the AuNPs. (a) the appearance of the AuNPs; (b) the aggregated AuNPs.

Table S1. Synthetic DNA sequences used in this work

Name	**Sequence (5' to 3')**
Sensing probe	GTA AGT CAG CGA TTT TCC ACA TGT CAG CGA TAC TGC TAG ACA TGT GGA AAA TCT CTA GCA GT GTG TCA CGG GAG CGC ACC CAT GTA AGT TG
M probe	GTA AGT CAG CGA TAC TGC TAG AGA TTT TCC ACA TGT CTA GCA GTA TCG CTG ACA TGT GGA AAC ACC CAT GTA AGT TG
Trigger sequence	ACT GCT AGA GAT TTT CCA CAT
H1 probe	GCG CTA GAG ATT TTC CAC ATA CAA CTT TrAG GAC TTA CCT AGC GC
CD63 protein aptamer	CAC CCC ACC TCG CTC CCG TGA CAC TAA TGC TAC TAT CCT

Table S2. A brief comparison of the method with former ones

Title	Principle	Sensitivity	Signal	Advantages and disadvantages	Ref
The method	CHA+ DNAzyme assisted signal cycle	3.08 particles/μL	DSL	Advantages: high sensitivity; easy-to-design; enzyme-free; portability; Disadvantages: low universality.	
CRISPR-Cas12a	Trans-cleavage of Cas12a	3×10^3 particles/μL	Fluorescence	Advantages: high specificity; Disadvantages: low universality; low sensitivity; require multiple enzymes; low portability.	[1]
Allosteric probe	Chain extension+ trans-cleavage of Cas12a	1×10^2 particles/μL	Fluorescence	Advantages: high sensitivity; wash-free; Disadvantages: low universality; require multiple enzyme; low portability; complicated probe design.	[2]
AcmPLA	RCA	1×10^3 particles/μL	Fluorescence	Advantages: high specificity; Disadvantages: low universality; low sensitivity; require multiple enzymes; low portability.	[3]
Immobilization coupling with aptamer	Dual signal amplification	100 particles/μL	Fluorescence	Advantages: high sensitivity; Disadvantages: low universalityrequire multiple enzymes; low portability.	[4]

RCA, rolling circle amplification; CHA, catalytic hairpin assembly; DSL, diameter light scattering;

References:

1. Zhao, X.; Zhang, W.; Qiu, X.; Mei, Q.; Luo, Y.; Fu, W., Rapid and sensitive exosome detection with CRISPR/Cas12a. *Anal. Bioanal. Chem.* **2020,** *412* (3), 601-609.

2. Zhao, X.; Zeng, L.; Mei, Q.; Luo, Y., Allosteric Probe-Initiated Wash-Free Method for Sensitive Extracellular Vesicle Detection through Dual Cycle-Assisted CRISPR-Cas12a. *ACS Sens* **2020,** *5* (7), 2239-2246.

3. Zhao, X.; Luo, C.; Mei, Q.; Zhang, H.; Zhang, W.; Su, D.; Fu, W.; Luo, Y., Aptamer-Cholesterol-Mediated Proximity Ligation Assay for Accurate Identification of Exosomes. *Anal. Chem.* **2020,** *92* (7), 5411-5418.

4. He, Y.; Ren, Y.; Tang, J., Immobilization coupling with aptamer assisted dual cycle amplification for sensitive sEVs isolation and analysis. *Biotechnol. Lett* **2024**.