

Electronic Supplementary Material

Detection of Locus-Specific N⁶-Methyladenosine Modification Based on Ag⁺-Assisted Ligation and Supersandwich Signal Amplification

*Yanxia Wang,[†] Ji Zheng,[†] Chengjie Duan, Jin Jiao, Youjing gong, Hai Shi, Yang
Xiang,**

State Key Laboratory of Pharmaceutical Biotechnology, School of Life Sciences,
Nanjing University, Nanjing 210023, P. R. China

Table S1 DNA oligonucleotides used in the work.

* Corresponding authors: xiangy@nju.edu.cn (Y. Xiang)

[†] These authors contributed equally to this work.

Name	Sequences (5'-3')
I	SH (CH ₂) ₆ -TCC GAG CCC GAC GCA TGA TCT GTA CTT GAC-OH
T	ATC AAG TAC AGA TCA TGC GTT GCA CGG TCG /6-MedA/TC AAG TAC AGA TCA TGC GTC GGG CTC GGA
TA	ATC AAG TAC AGA TCA TGC GTT GCA CGG TCG ATC AAG TAC AGA TCA TGC GTC GGG CTC GGA
P1	CGA CCG TGC AAC GCA TGA
P2	CGA CCG TGC AAC GCA TGA TCT GTA CTT GAT CCC TAA CCC TAA CCC TAA
H1	CCC TAA CCC TAA GTA GTG TTA GGG TTA GGG TTA GGG-MB
H2	MB-CAC TAC TTA GGG TTA GGG CCC TAA CCC TAA CCC TAA

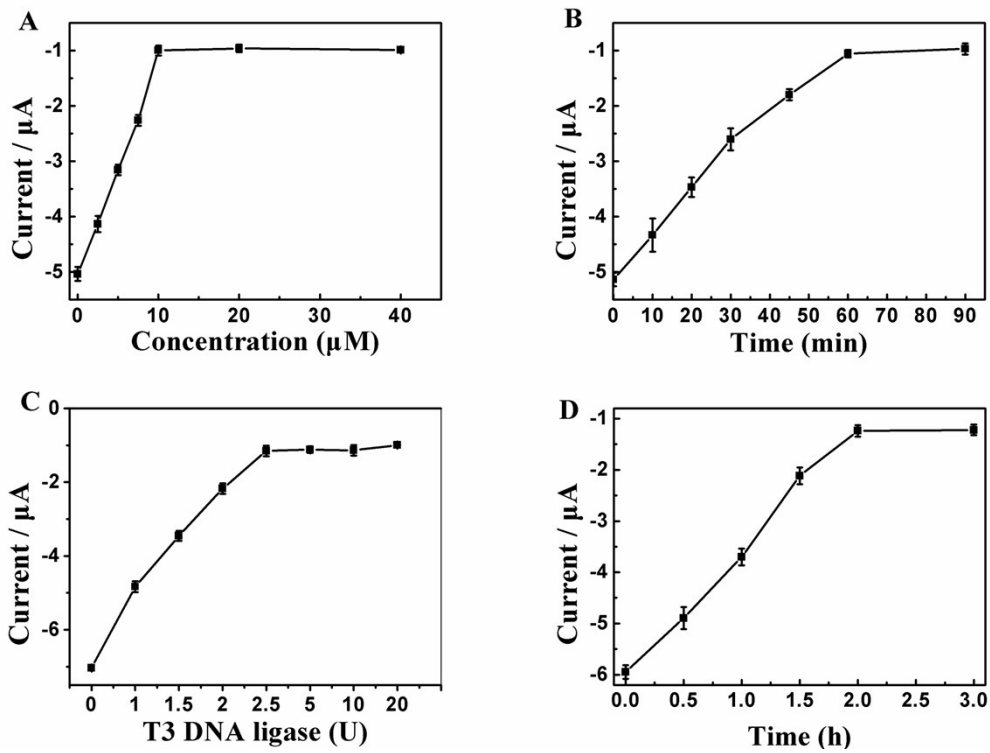


Fig. S1. The optimization of (A) Ag⁺ concentration. (B) The reaction time of Ag⁺ mediated base pairing of A and C. (C) T3 DNA ligase concentration. (D) The reaction time of T3 DNA ligase.

Table S2. Comparison of the proposed method with other reported methods

Detection strategy	Target analyte	Sample source	Detection limit	Ref.
Optical	DNA methylation	Human lung cancer	0.8 fM	33
Photoelectrochemical	DNA methylation	Synthetic oligonucleotides	35 fM	34
Electrochemical	DNA methylation	Synthetic CpG oligonucleotides (20-mer and 60-mer)	Not mentioned	35
Liquid chromatography tandem mass spectrometry	Global DNA methylation	Normal and tumor tissues of colorectal cancer	0.05 pg	36
High-performance capillary electrophoresis	Global DNA methylation	Methotrexate-resistant A549 cells	1 μ M	37
Fluorimetric nanobiosensor	DNA methylation	Sequence of APC gene	0.31 fM	38
Electrochemical	DNA methylation	Synthetic oligonucleotides	44.427 pM	This work