

Supporting Information (SI)

for

A Simple and Low-Cost Screen Printed Electrode for Hepatocellular Carcinoma Methylation Detection

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Table.S1: Sequences of DNA oligonucleotides and primes.

Oligos	5'-3'
Methylated Sequence	CGAACCGCGACCGTAACCAACCAATCAACCGAAA ACTCCATACTACTCCCCGCCGCCG
Unmethylated Sequence	CAAACCACAACCATAACCAACCAATCAACCAAAA ACTCCATACTACTCCCCACCACCA
P16-M Forward	TTATTAGAGGGTGGGGCGGATCGC
P16-M Reward	GACCCCGAACCGCGACCGTAA
P16-U Forward	TTATTAGAGGGTGGGGTGGATTGT
P16-U Reward	CAACCCCAAACCACAACCATAA
P16-273bp Forward	GAAGAAAGAGGAGGGGCTGG
P16-273bp Reward	CTGCAGACCCTCTACCCAC

Table.S2: Clinical information of patients.

ID	Age	Sex	Diagnosis
N1	52	Female	Intrahepatic bile duct (IHD) stone
N2	65	Female	Intrahepatic bile duct (IHD) stone
P1	72	Female	Adenocarcinoma
P2	61	Male	Hepatocellular carcinoma
P3	70	Female	Hepatocellular carcinoma
P4	40	Male	Hepatocellular carcinoma
P5	63	Female	Hepatocellular carcinoma

Table.S3: Comparison of analytical performance with other works.

Materials	Limit of Detection	Sensitivity	Specificity	Reproducibility	Ref.
AuNPs	50ng	/	/	/	1
Gold	808ng	25%	/	<8%	2
Gold	4.8ng	10%	/	≤5.8%	3
Gold	25ng	5%	/	≤5%	4
Graphen	11.7ng	5%	1 CpG site	≤5%	5

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AuNPs	1.1ng	10%	1 CpG site	=<7.2%	This work

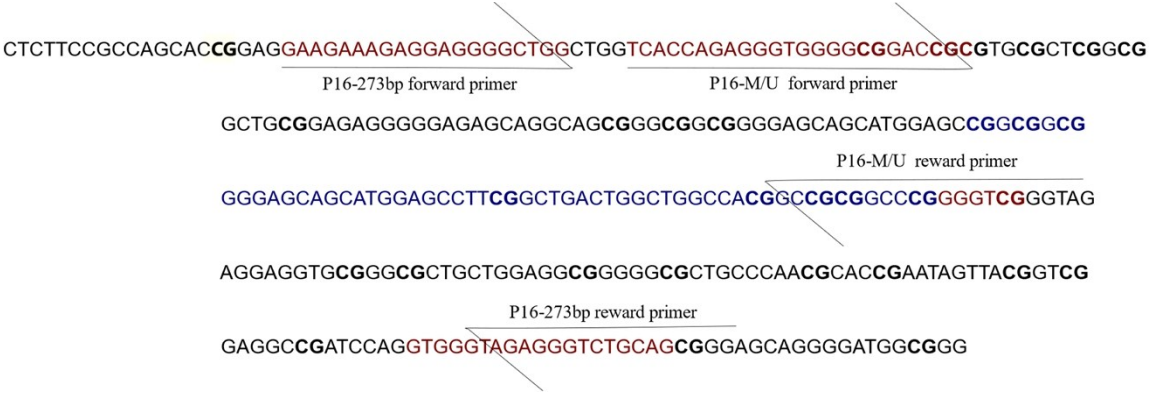


Fig.S1 The p16 promoter sequence used in the experiment and the position of synthetic sequence (Blue). The primers were indicated by black arrows. CpG dinucleotides were in bold font.

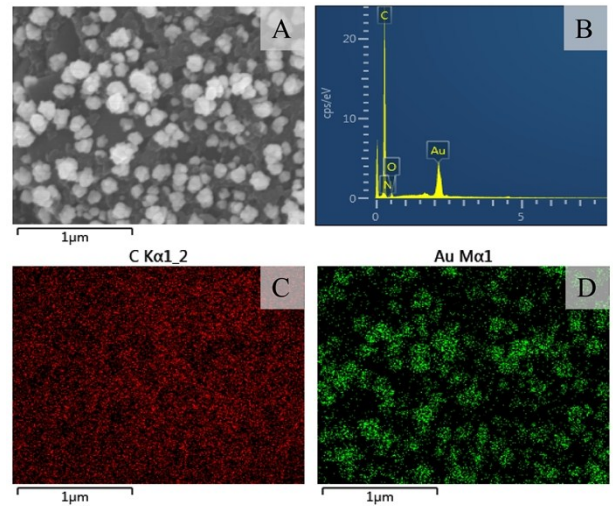


Fig.S2 The elemental distribution of 300 s deposition SPCE-AuNPs. (A) The SEM image. (B) The elemental distribution, 76.67 wt% carbon and 20.25 wt% Au. (C) The carbon took all the electrode. (D) The Au accumulated in particles, which were bright parts in the first image.

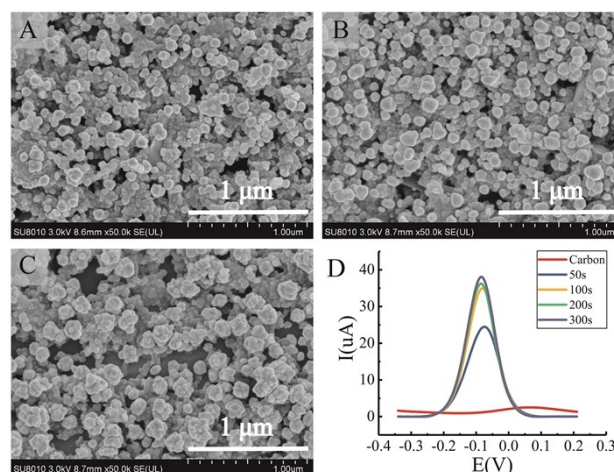


Fig.S3 The SEM images and DPV signal of SPCE-AuNPs. (A) 50 s electrodeposition. (B) 200 s electrodeposition. (C) 300 s electrodeposition. (D) DPV signal before and after different electrodeposition time.

Reference:

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