Electronic Supplementary Material (ESI) for Analytical Methods.

LoC-SERS platform based on triple signal amplification for highly sensitive detection of colorectal cancer miRNAs

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Table S1. Oligonucleotides used in the experiments

Name	Sequence (5' - 3')
miRNA-122	UGG AGU GUG ACA AUG GUG UUU G
miRNA-192	CUG ACC UAU GAA UUG ACA GCC
MT1-1	UGG ACU GUG ACA AUG GUG UUU G
MT1-2	CGG ACC UAU GAA UUG ACA GCC
MT3-1	UCG AGU GUG AUA ACG GUG UUU G
MT3-2	CAG ACC UGU GAA UGG ACA GCC
hpDNA1-1	ATG TGT TGC AGT CGA TGC TGA GGC AAA CAC CAT TGT CAC GTA GTG CAA CA
hpDNA1-2	TCA GAT GTG ACT AGT GCT AGC TGA GGC TGT CAA TTC ATA CAT GTC ACA T
hpDNA2-1	ACG TAA CAC CAT TGT CAC GAC CAT CGA CTT ATC GTG ACA ATG GTG TTG CCT CA
hpDNA2-2	ACG GTC AAT TCA TAC ATG TAA TAG ACA TGC TAC ATG TAT GAA TTG ACA GCC TCA
hpDNA3-1	CTA ACC ATC GAC TTA TAA CAC CAT TGT CAC GAT AAG TCG ATG GTC GTG ACA ACG C
hpDNA3-1	CTA ACC ATC GAC TTA TAA CAC CAT TGT CAC GAT AAG TCG ATG GTC GTG ACA ACG C
DNA1-1	ATG TGT TGC AGT CGA TGC
DNA1-2	TCA GAT GTG ACT AGT GCT AGC
DNA2-1	TGA GGC AAA CAC CAT TGT CAC GTA GTG CAA CA
DNA2-2	TGA GGC TGT CAA TTC ATA CAT GTC ACA T

Table S2 Basic characteristics of the healthy subjects and colorectal cancer patients

Groups		**Healthy subjects**	**Colorectal cancer**
Average age		34	47
Gender			
	Male	16	18
	Female	14	12
Sample number		30	30

Table S3 The miR-122 and miR-192 concentration detected by SERS using the proposed platform and ELISA in colorectal cancer patients

Samples	SERS (fM)		qRT-PCR (fM)	
	miR-122	miR-192	miR-122	miR-192
1	28.65	18.60	27.18	19.61
2	24.78	19.67	29.68	19.01
3	26.99	23.77	22.40	20.43
4	22.51	29.40	24.20	28.29
5	22.09	24.46	26.08	24.55
6	29.71	26.06	28.99	25.15
7	27.37	29.65	30.63	25.25
8	22.31	25.10	29.33	22.87
9	31.96	27.60	26.49	21.39
10	21.88	28.97	21.80	20.48
11	26.23	24.62	23.81	25.58
12	30.86	24.05	27.01	24.28
13	29.93	25.95	25.58	21.23
14	28.52	24.54	25.95	28.90
15	30.94	22.57	29.38	28.98
16	32.99	24.36	31.97	21.43
17	33.41	25.60	30.55	24.30
18	32.24	29.07	28.53	27.47
19	26.03	26.29	28.36	23.91
20	28.54	20.61	22.96	21.42
21	27.84	20.86	30.07	18.63
22	30.36	21.02	27.43	21.66
23	24.67	31.40	21.69	29.12
24	24.21	27.74	23.65	25.11
25	27.89	21.08	25.20	18.98
26	26.15	27.66	26.33	23.53
27	26.91	28.00	28.97	28.81
28	32.20	25.50	32.32	22.20
29	26.07	31.33	24.68	28.18
30	30.77	25.75	22.42	23.48

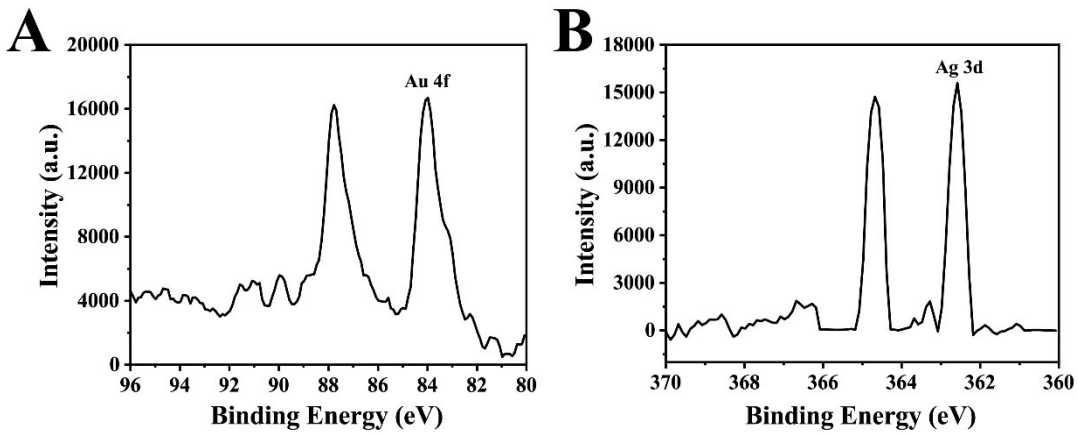

Fig. S1. XPS spectra of Au-AgNSs (a) high resolution Au 4f (b) high resolution Ag 3d.