

**Three dimensional M×N type aptamer-functionalized solid-phase micro extraction fibers
array for selectively sorptive extraction of multiple antibiotic residues in milk**

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Table S1 The effects on the recovery of targets using different ratios of three chloramphenicols.

Ratios			Recovery (%)		
CAP	TAP	FF	CAP	TAP	FF
1	5	10	89.1	89.2	93.1
5	1	10	90.5	92.2	92.6
10	5	1	89.5	94.4	94.6
1	10	5	89.2	92.9	89.6
5	10	1	91.1	89.2	94.8
10	1	5	90.8	88.2	91.4

Table S2 The extraction efficiency of the method for three chloramphenicols.

Targets	Extraction time	Desorption time	Adsorption capacity (ng/fiber)	Recovery
CAP			887	80.2-91.5 %
TAP	20 min*	10 min*	840	76.5-92.4 %
FF			801	75.7-94.5 %

* Total for 12 samples

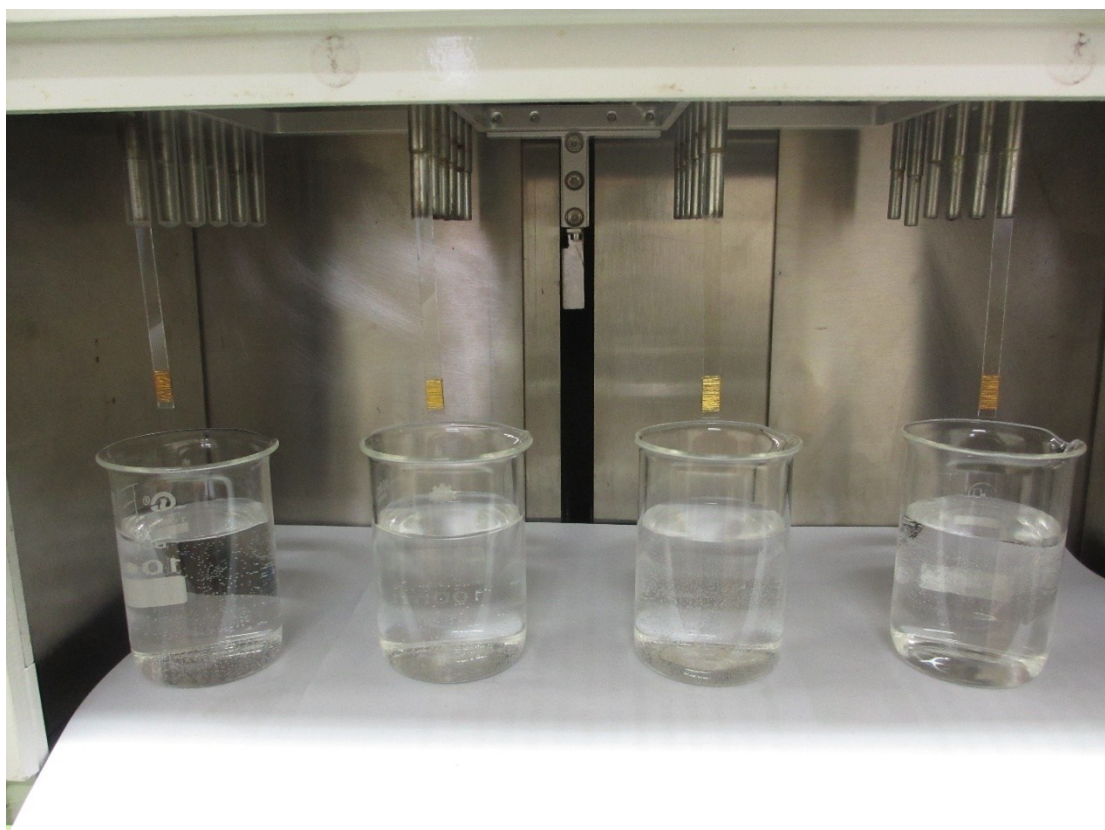


Fig. S1 The fiber sorption extraction assay

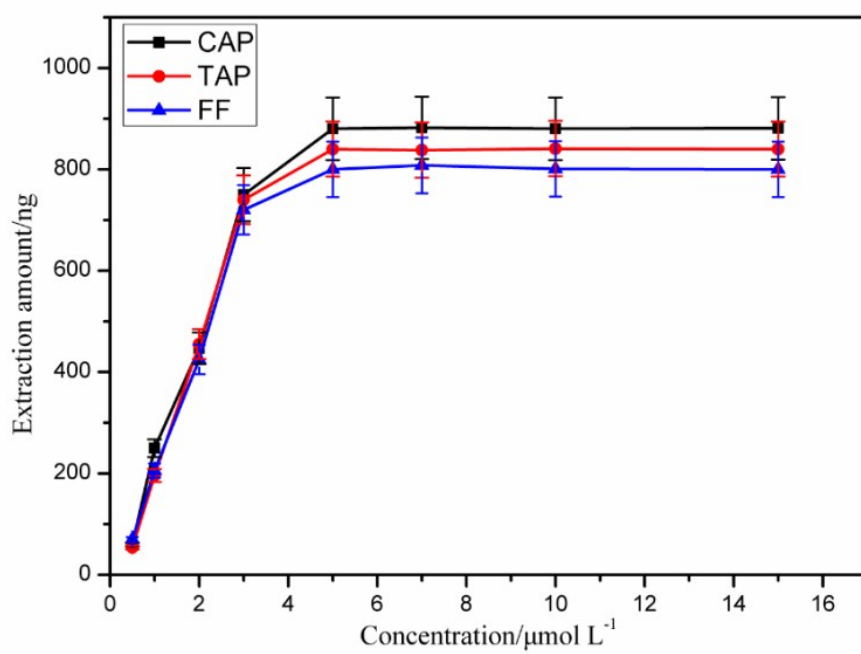


Fig. S2 Optimization of aptamer amount

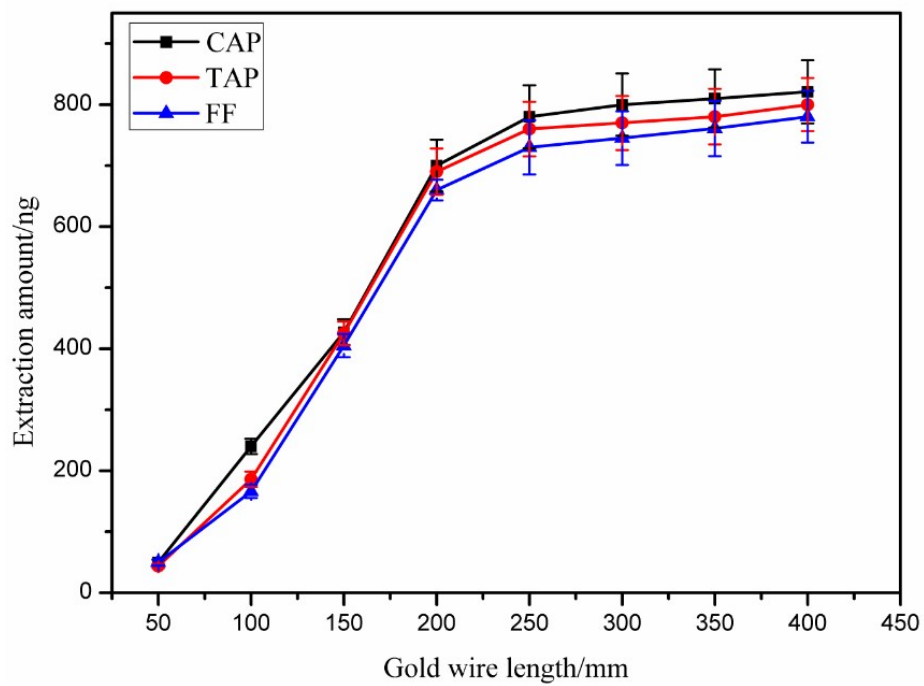


Fig. S3 Optimization of gold wire length

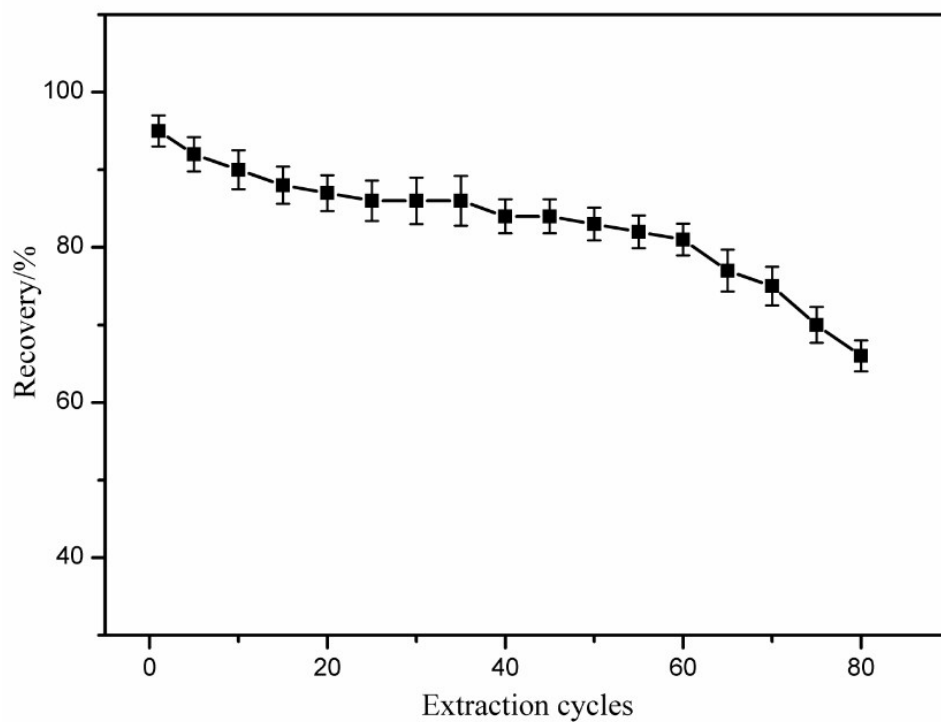


Fig. S4 Reusability of the coating

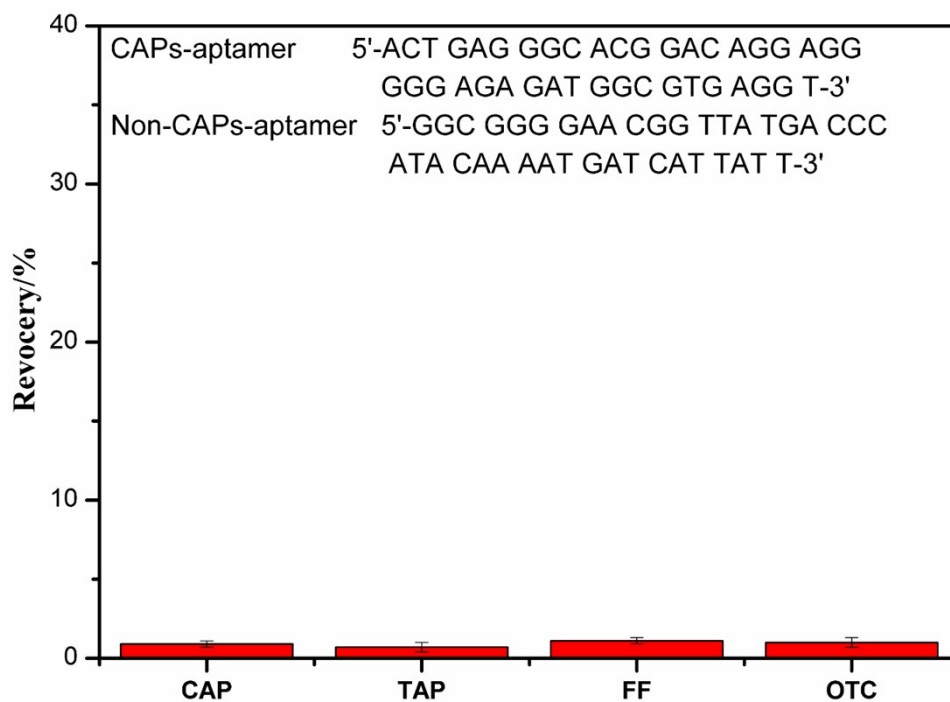


Fig. S5 The adsorption of chaotic sequence for CAP, TAP, FF and OTC

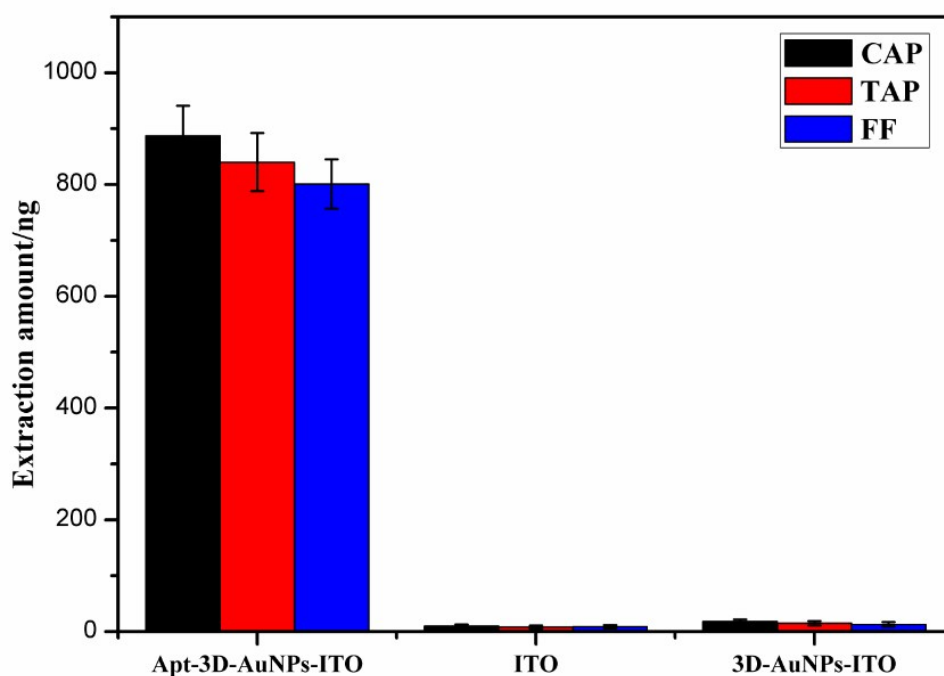


Fig. S6 Compare the absorption ability of Apt-3D-AuNPs-ITO fiber, ITO fiber and 3D-AuNPs-

ITO fiber

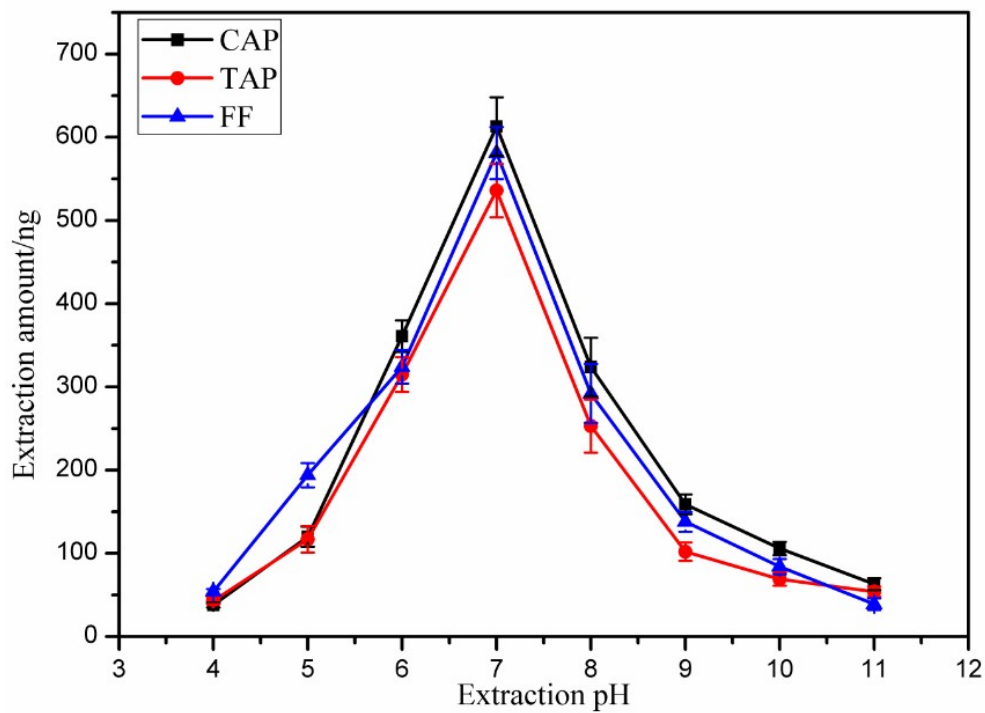


Fig. S7 Optimization of extraction pH

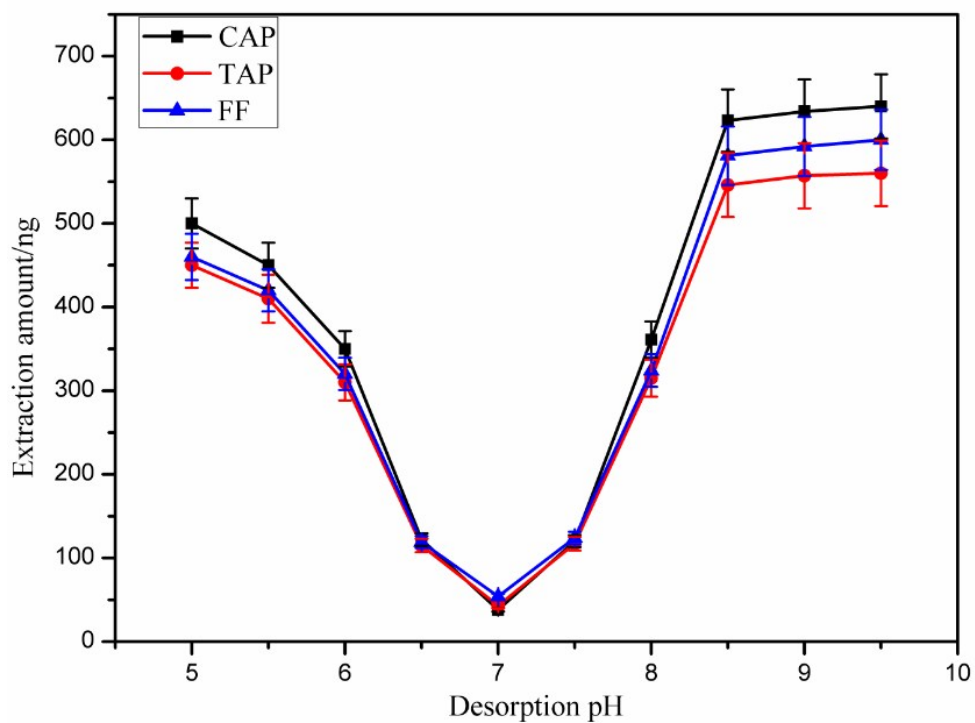


Fig. S8 Optimization of desorption pH

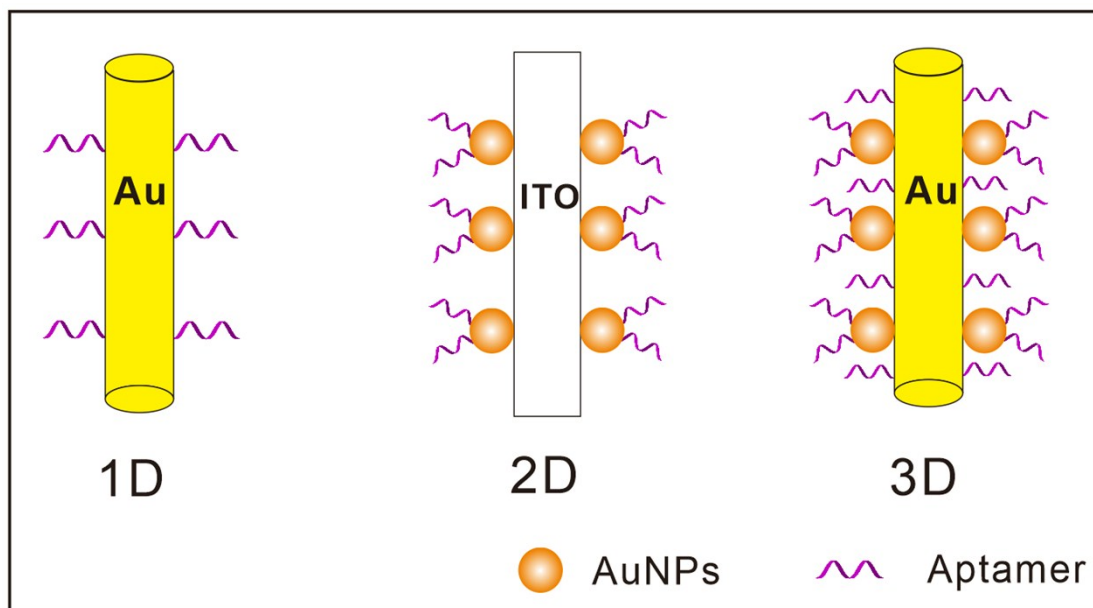


Fig. S9 The sketch of 1D-Apt@Au Wire-ITO, 2D-Apt@AuNPs-ITO and 3D-Apt@AuNPs@Au Wire-ITO.

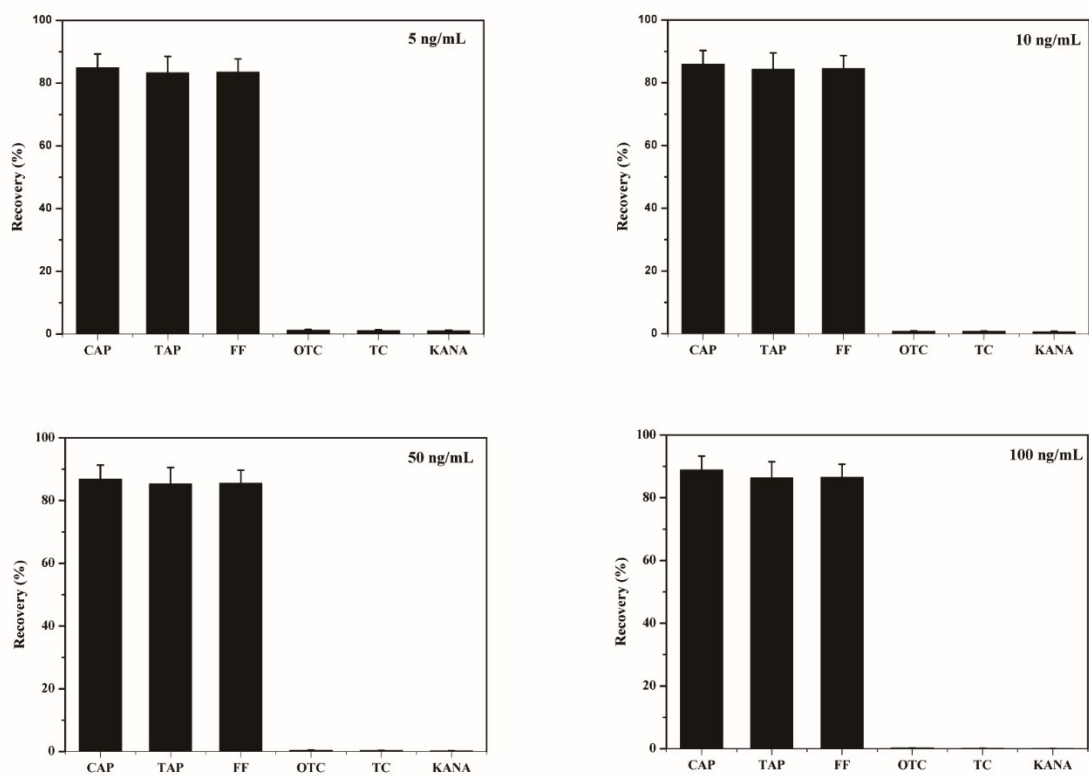


Fig. S10 The different concentrations of interfering chemicals

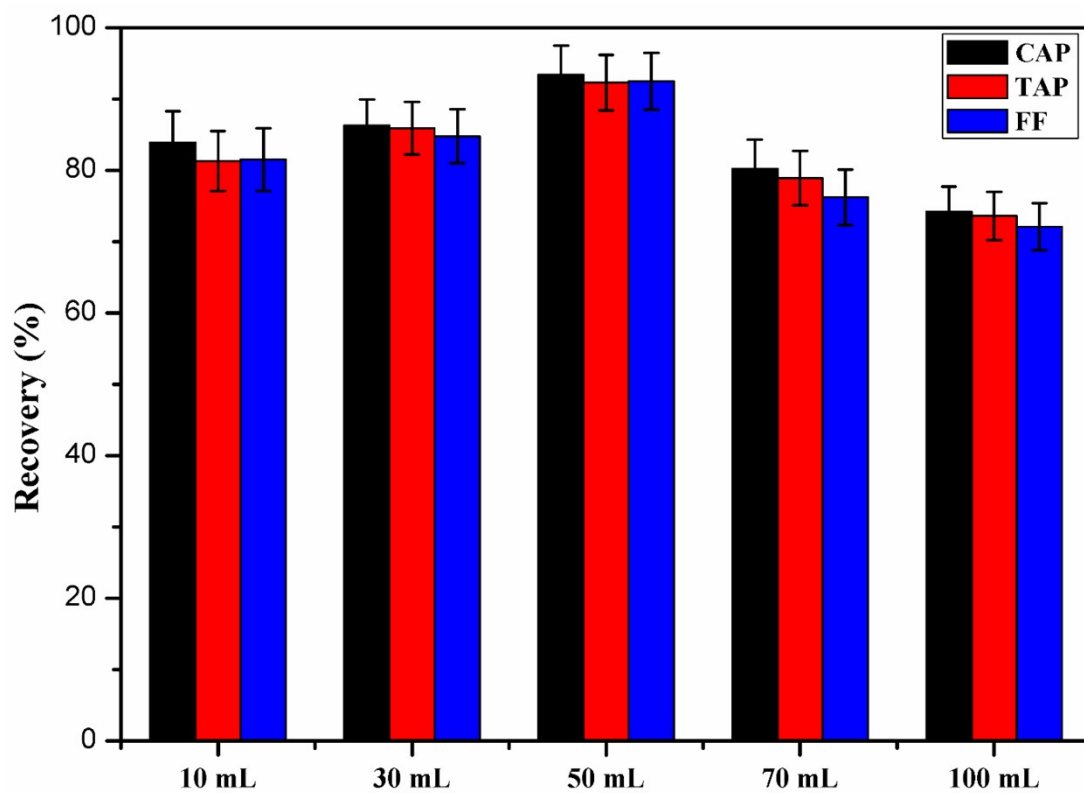


Fig. S11. Optimization of sample volume.