Electronic Supplementary Material (ESI) for Analytical Methods.

Hydrophobic magnetic nanoparticles assisted catanionic surfactant supramolecular solvent microextraction of multiresidue antibiotics in water samples

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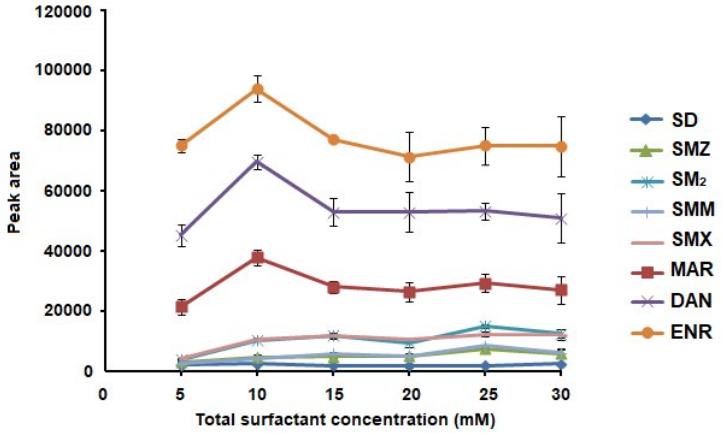


Fig. S1 Effect of total surfactant concentration on the peak area of FQs and SAs. Conditions: LA:DTAOH=5:5 mol/mol, HFIP=5% (*v*/*v*), SUPRAS microextraction for 5 min, 10 mg Fe_3O_4@SiO_2@C18 nanoparticles, the adsorption of SUPRAS by MNPs for 10 s vortex, elution with 1 mL methanol for 10 s vortex, sample volume 10 mL.

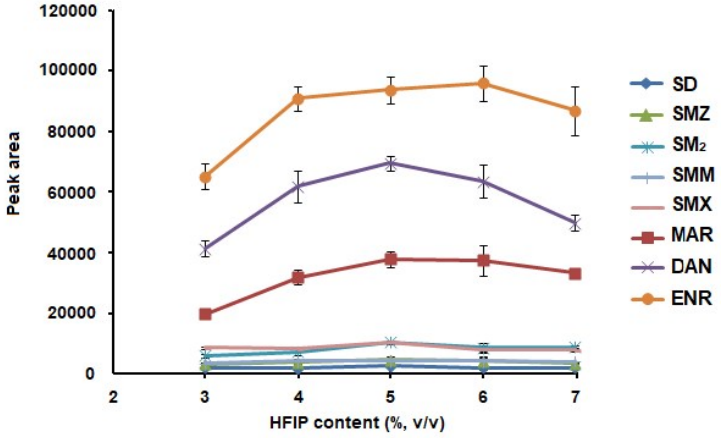


Fig. S2 Effect of HFIP content on the peak area of FQs and SAs. Conditions: LA:DTAOH=5:5 mol/mol, $C_{\text{total surfactant}}$=10 mM, SUPRAS microextraction for 5 min, 10 mg Fe_3O_4@SiO_2@C18 nanoparticles, the adsorption of SUPRAS by MNPs for 10 s vortex, elution with 1 mL methanol for 10 s vortex, sample volume 10 mL.

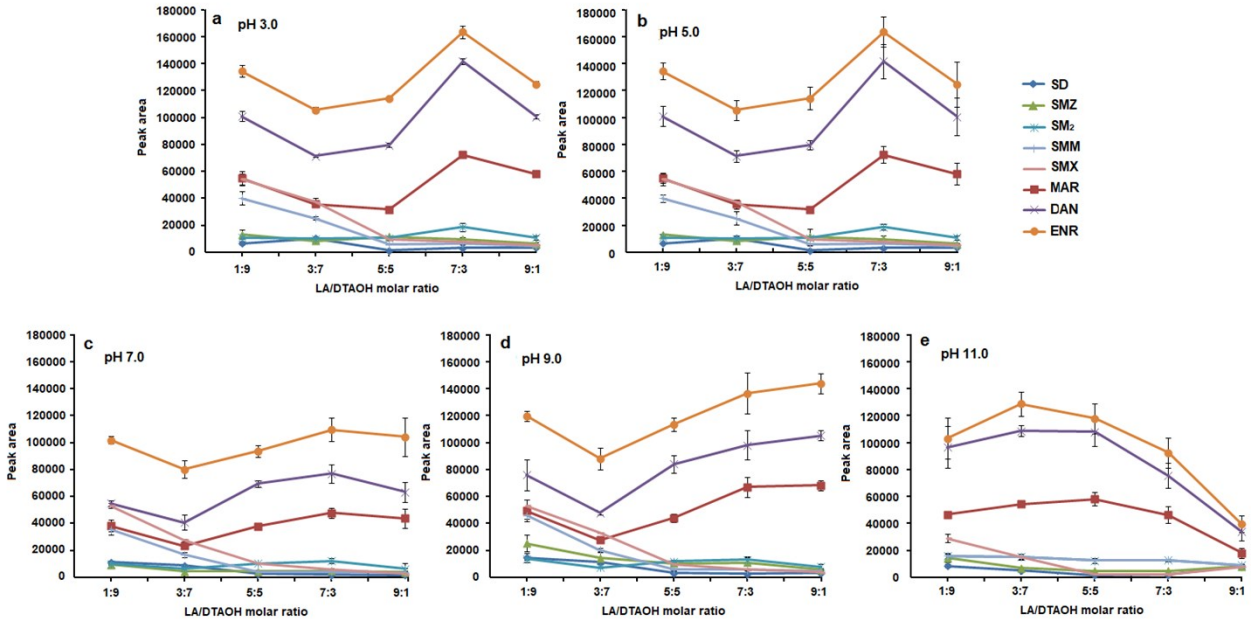


Fig. S3 Effects of LA/DTAOH molar ratio and sample pH on the peak area of FQs and SAs. (a) pH 3.0, (b) pH 5.0, (c) 7.0, (d) 9.0 and (e) 11.0. Conditions：HFIP=5% (v/v), $C_{\text{total surfactant}}$ = 10 mM, SUPRAS microextraction for 5 min, 10 mg Fe_3O_4@SiO_2@C18 nanoparticles, the adsorption of SUPRAS by MNPs for 10 s vortex, elution with 1 mL methanol for 10 s vortex, sample volume 10 mL.

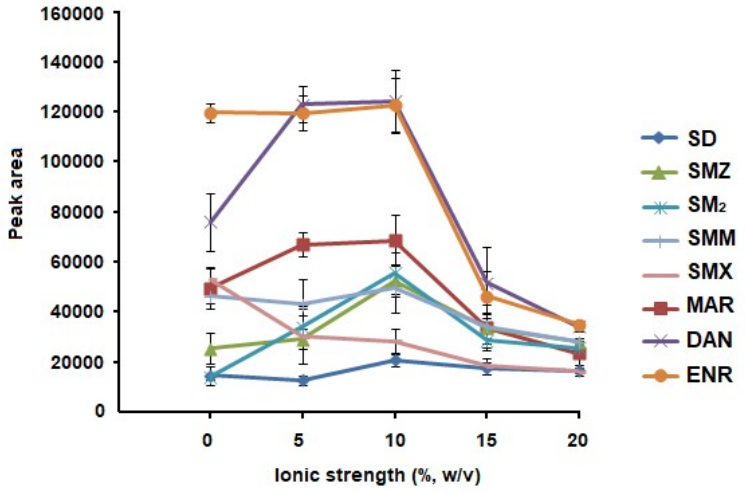


Fig. S4 Effect of ionic strength on the peak area of FQs and SAs. Conditions: HFIP=5% (*v/v*), $C_{\text{total surfactant}}$ = 10 mM, LA:DTAOH=1:9 (mol/mol), sample pH 9.0, SUPRAS microextraction for 5 min, 10 mg Fe_3O_4@SiO_2@C18 nanoparticles, the adsorption of SUPRAS by MNPs for 10 s vortex, elution with 1 mL methanol for 10 s vortex, sample volume 10 mL.

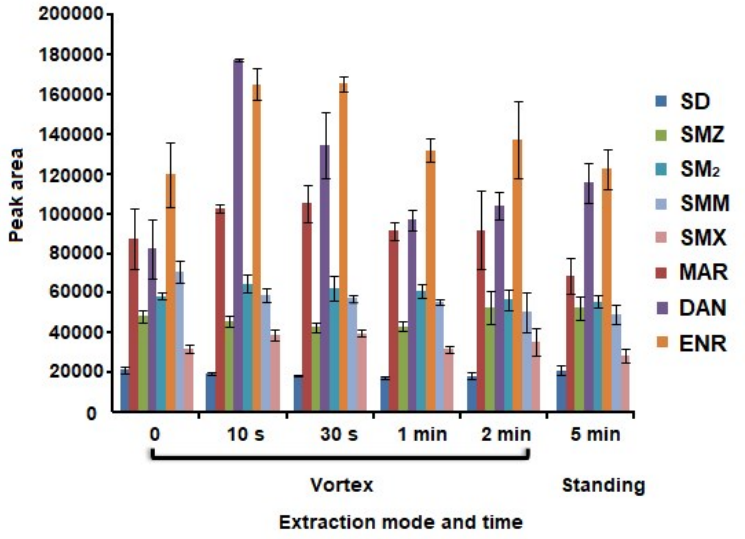
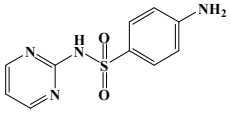
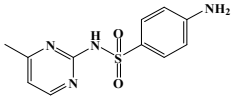
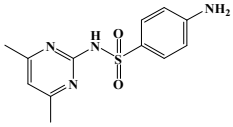
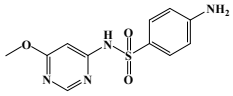
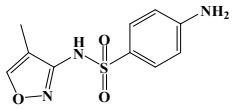
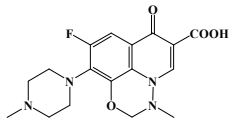
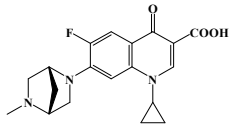
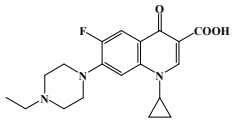


Fig. S5 Effects of extraction mode and time on the peak area of FQs and SAs. Conditions: HFIP=5% (*v/v*), $C_{\text{total surfactant}}$= 10 mM, LA:DTAOH =1:9 (mol/mol), sample pH 9.0, 10 mg Fe_3O_4@SiO_2@C18 nanoparticles, the adsorption of SUPRAS by MNPs for 10 s vortex, elution with 1 mL methanol for 10 s vortex, sample volume 10 mL, 10% (g/mL) NaCl.

Table S1 Chemical structures and physical properties of sulfonamides (SAs) and fluoroquinolones (FQs)[a].

Analyte	Abbreviation	Chemical structure	pK_a	log$P$
Sulfadiazine	SD		1.64±0.10 6.81±0.10	-0.074±0.255
Sulfamerazine	SMZ		1.64±0.10 7.35±0.10	0.107±0.267
Sulfadimidine	SM_2		1.69±0.10 7.89±0.10	0.296±0.278
Sulfamonomethoxine	SMM		2.81±0.10 6.67±0.30	1.032±0.398
Sulfamethoxazole	SMX		1.39±0.10 5.81±0.10	0.659±0.409
Marbofloxacin	MAR		6.02±0.20 7.34±0.42	0.641±0.921
Danofloxacin	DAN		6.43±0.41 9.00±0.20	1.811±0.909
Enrofloxacin	ENR		6.43±0.41 7.76±0.10	2.306±0.819

[a] The values of pK_a and log$P$ were found in the SciFinder website.