

SUPPLEMENTARY INFORMATION

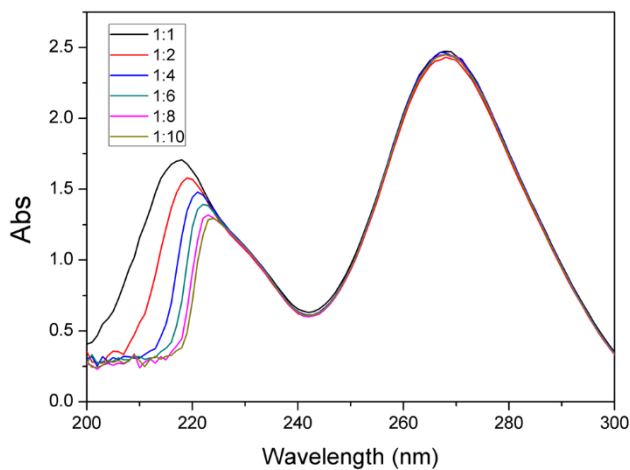


Fig S1. UV-vis spectra of SMZ mixed with different amount of MAA (the ratio of SMZ to MAA were 1:1, 1:2, 1:4, 1:6, 1:8 and 1:10, The concentration of SMZ was $20 \mu\text{g mL}^{-1}$, the spectra were recorded with the corresponding concentration of MAA solution as reference).

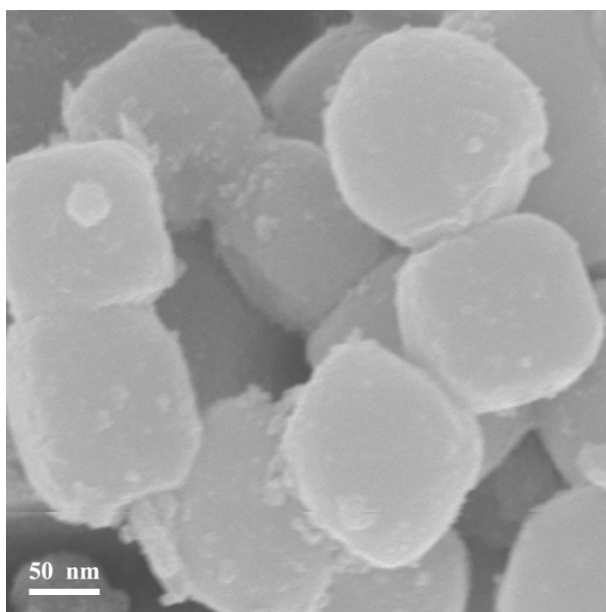


Fig S2. SEM image of the UCNPs@MIP.

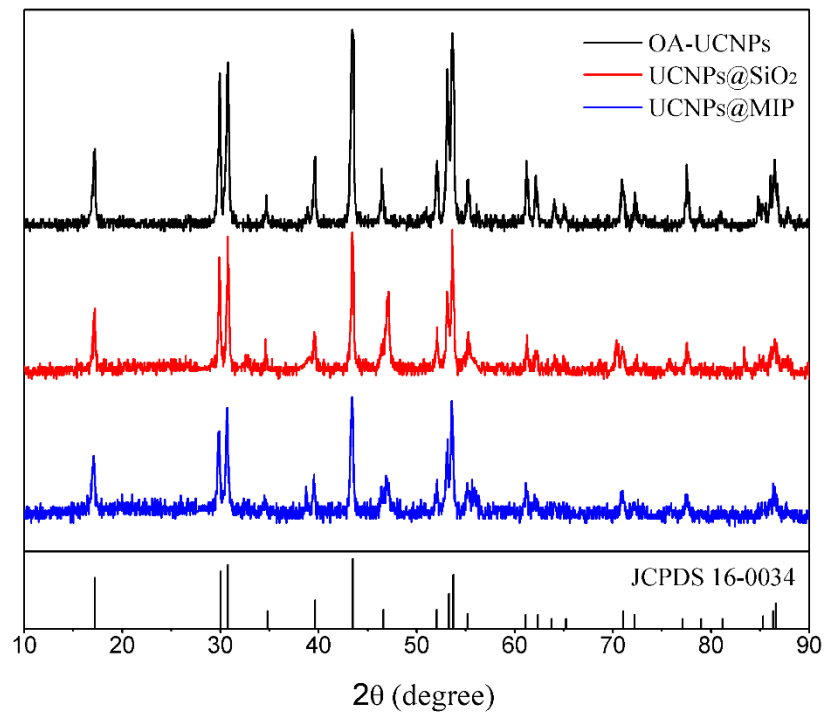


Fig S3. XRD patterns of OA-UCNPs, UCNPs@SiO₂ and UCNPs@MIP.

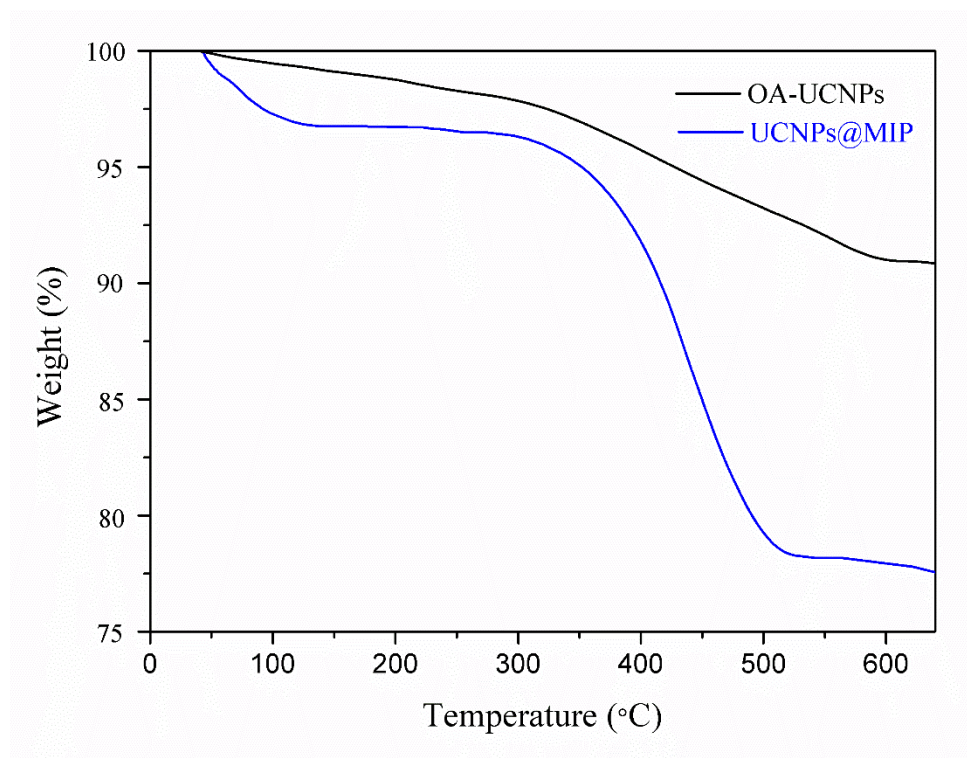


Fig S4. TGA curves of OA-UCNPs and UCNPs@MIP.

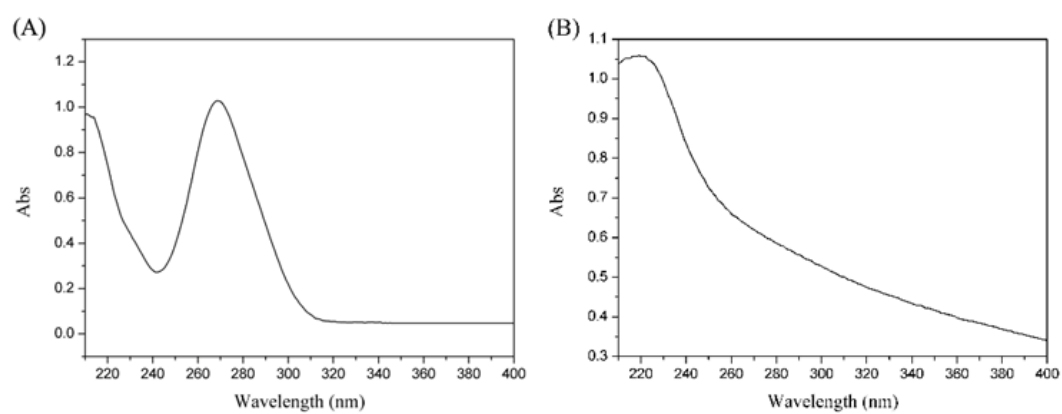


Fig S5. The UV absorption spectra of SMZ (A) and UCNPs@MIP (B) in acetonitrile.

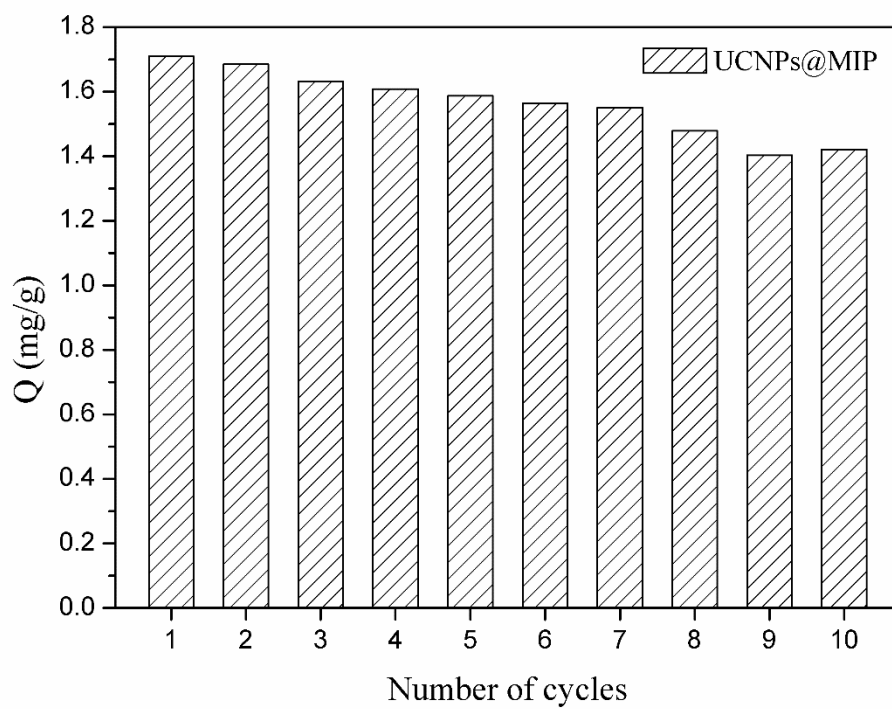


Fig S6. Reusability of UCNPs@MIP for SMZ adsorption.

Table S1. The comparison of the proposed method with other reported methods towards the detection of SMZ.

Analytical method	Mechanism	Linear range (ng mL ⁻¹)	LOD (ng mL ⁻¹)	Analysis of real sample	Remarks
Magnetic ZnO surface-MIP FL sensor ¹	Charge transfer	556-27833	19.0	Enrichment of pork sample	No real sample detection
On-line SPR sensor ²	immunosorbent assay	Not given	15	Porcine bile	No linear equation
cFLISA using QD-antibody conjugates ³	immunosorbent assay	10-1000	1.0	Chicken Muscle Tissue	Time consuming
Capillary zone electrophoresis ⁴	Electrochemical detection	10 ³ - 10 ⁵	93	Animal Tissue samples	High detection limit
Our method	Charge transfer	50-700	34	Chicken meet	Simple pretreatment

Reference

- 1 L.C. Xu, J.M. Pan, J.D. Dai, Z.J. Cao, H. Hang, X.X. Li, Y.S. Yan, Magnetic ZnO surface-imprinted polymers prepared by ARGET ATRP and the application for antibiotics selective recognition, RSC Adv. 2 (2012) 5571-5579
- 2 S.T. Chen, S.R.H. Crooks, A.G. Baxter, J. Ferguson, C.T. Elliott, On-line detection of sulfamethazine and sulfadiazine in porcine bile using a multi-channel high-throughput SPR biosensor, Anal. Chim. Acta 473 (2002) 143–149.
- 3 S.Y. Ding, J.X. Chen, H.Y. Jiang, J.H. He, W.M. Shi, W.S. Zhao, J.Z. Shen, Application of quantum dot-antibody conjugates for detection of sulfamethazine residue in chicken muscle tissue. J. Agric. Food Chem. 54 (2006) 6139-6142.
- 4 Q.C. Chu, D.L. Zhang, J.Y. Wang, J.N. Ye, Multi-residue analysis of sulfonamides in animal tissues by capillary zone electrophoresis with electrochemical detection, J. Sci. Food Agric. 89 (2009) 2498–2504.