Supporting information for

Ultrasound assisted switchable hydrophilic solvent based homogeneous liquid-liquid microextraction for determination of triazole fungicides in environmental water by GC-MS

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Fig. S1 Effect of SHS type on the extraction of 3 TFs. TEA on the left and DMCHA on the right. Extraction conditions: extraction solvent volume, 400 µL; ultrasonic time, 30 s; NaOH volume, 2 mL; NaCl, 0 g.
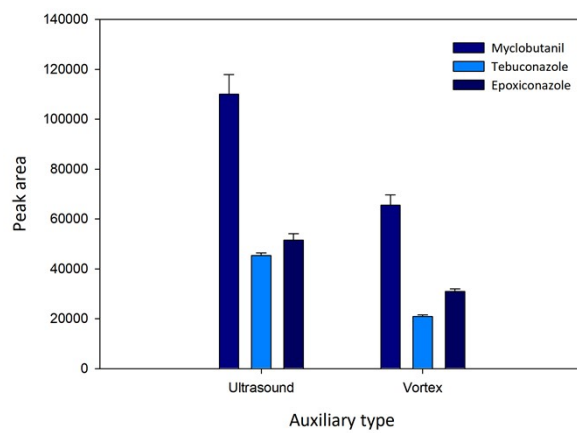
Fig. S2 Effect of auxiliary type on the extraction of 3 TFs. Extraction conditions: extraction solvent (Protonated DMCHA) volume, 400 μL; auxiliary time, 30 s; NaOH volume, 2 mL; NaCl, 0 g.
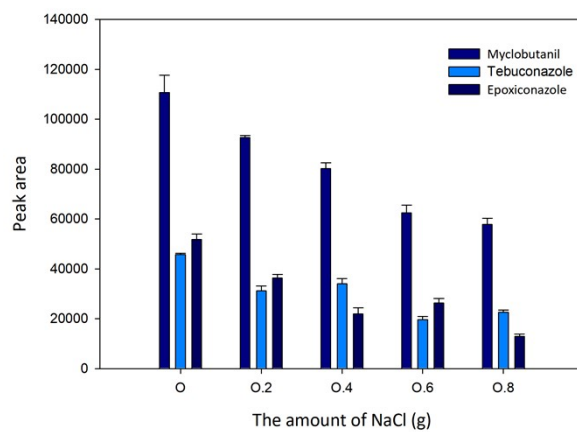

Fig. S3 Effect of Ionic Strength on the extraction of 3 TFs. Extraction conditions: extraction solvent (Protonated DMCHA) volume, 400 μL; ultrasonic time, 30 s; NaOH volume, 2 mL.
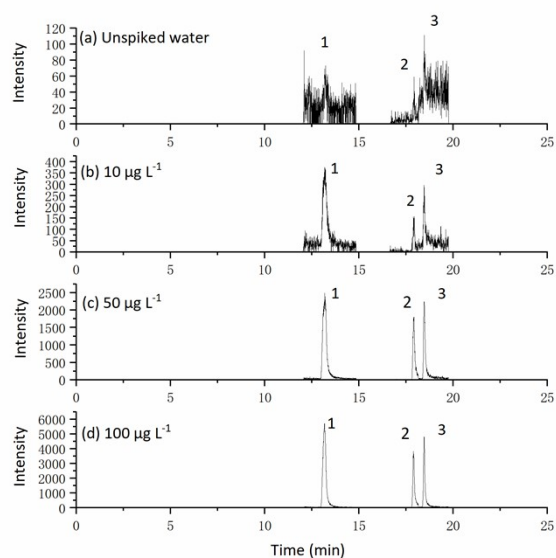
Fig. S4 Total ionic chromatograms of (a) an unspiked water sample; (b) water samples spiked with10 $\mu g \cdot L^{-1}$ of each analyte; (c)50 $\mu g \cdot L^{-1}$ of each analyte; (d)100 $\mu g \cdot L^{-1}$ of each analyte. (1: Myclobutanil, 2: Tebuconazole, 3: Epoxiconazole)

Table S1 The details of the Box–Behnken design

Name	Low (-1)	High (+1)
A: SHS(μL)	400	500
B: NaOH (mL)	1.5	2.5
C: Ultrasonic time (s)	15	45

No.	A:SHS (μL)	B: NaOH (mL) c	C: ultrasonic time (s)
1	450	2	30
2	500	2	15
3	450	2	30
4	450	2.5	45
5	400	2.5	30
6	450	2	30
7	400	1.5	30
8	450	2	30
9	400	2	15
10	500	2	45
11	500	2.5	30
12	500	1.5	30
13	450	1.5	15
14	450	2	30
15	450	1.5	45
16	450	2.5	15
17	400	2	45

Table S2 Calibration curves of three triazoles (n=3)

Analytes	Equation	linear range (mg·L^{-1})	R^2
Myclobutanil	Y=23664x-4091.6	1-10	0.9997
Tebuconazole	Y=6069.9x-2297	1-10	0.9997
Epoxiconazole	Y=9155x-3318	1-10	0.9992

Table S3 Recoveries of three triazoles added in environmental water(n=3)

Analytes	Spiked concentration /$\mu g \cdot L^{-1}$	Recoveries，%			RSD，%
Myclobutanil	10	97.2	103.1	97.2	3.43
	50	105.9	105.4	95.7	5.62
	100	90.5	105.1	90.1	9.01
Tebuconazole	10	94.8	97.5	99.1	2.19
	50	90.1	91.7	94.5	2.42
	100	83.8	94.1	89.6	5.74
Epoxiconazole	10	91.4	111.1	108.7	10.36
	50	86.2	107.1	81.3	14.97
	100	98.5	107.2	90.4	8.51