

**Speciation analysis of inorganic arsenic in food and water samples by electrothermal  
atomic absorption spectrometry after magnetic solid phase extraction by a novel MOF-  
199/modified magnetite nanoparticles composite**

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**Table1S**

Experimental variables along with their levels in Box Behnken design (BBD).

		Level		
		Lower	Central	Upper
Sorption step	A: pH	1.0	3.0	5.0
	B: Sorbent amount (mg)	7.0	13.5	20.0
	C: Uptake time (mg)	3.0	9.0	15.0
Elution step	A: Thiourea concentration (mol L <sup>-1</sup> )	0.4	0.95	1.5
	B: HCl concentration (mol L <sup>-1</sup> )	0	0.05	0.1
	C: Eluent volume (mL)	1.5	2.25	3.0
	D: Elution time (min)	5.0	10.0	15.0

**Table 2S**

The recovery of As(III) ions in the presence of potentially interfering ions.

Potentially interfering Ions	Tolerable concentration ratio X/As(III)	Recovery (%)
Cl <sup>-</sup>	11000	96.1 ± 6.2
CH <sub>3</sub> COO <sup>-</sup>	15000	98.6 ± 5.8
NO <sub>3</sub>	12000	96.4 ± 5.8
SO <sub>4</sub> <sup>2-</sup>	10000	95.0 ± 5.3
CrO <sub>4</sub> <sup>-</sup>	100	94.5 ± 4.3
K <sup>+</sup>	10000	99.5 ± 7.0
Na <sup>+</sup>	10000	98.7 ± 6.2
Mg <sup>2+</sup>	2000	98.1 ± 3.9
Ca <sup>2+</sup>	2000	96.1 ± 5.5
Pb <sup>2+</sup>	250	95.8 ± 4.7
Co <sup>2+</sup>	200	97.1 ± 5.6
Zn <sup>2+</sup>	150	95.0 ± 4.1
Cu <sup>2+</sup>	100	96.0 ± 4.4
Cd <sup>2+</sup>	50	97.5 ± 4.8
Al <sup>3+</sup>	30	98.0 ± 6.6
Cr <sup>3+</sup>	100	94.0 ± 3.6
Mn <sup>2+</sup>	300	96.4 ± 5.7

<sup>a</sup> Recovery<sup>b</sup> standard deviation (n = 3)Conditions: sample pH = 3.0, As(III) concentration = 100 ng L<sup>-1</sup>, sorption time = 13 min; eluent volume = 2.5 mL, 0.065 mol L<sup>-1</sup> HCl in 1.1 mol L<sup>-1</sup> thiourea solution, elution time = 11 min.<sup>c</sup> Concentration of potentially interfering ions.