

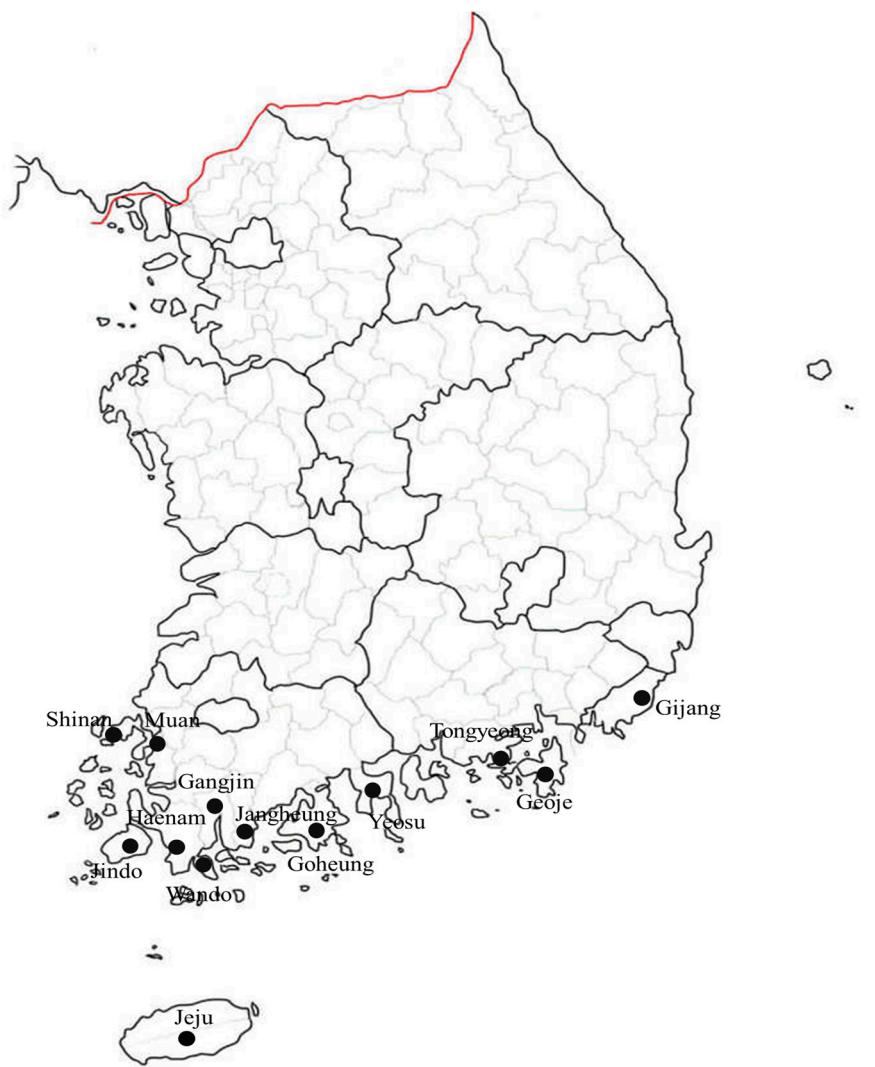
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**Figure S1.**



**Fig. S1.** Map of sampling cities on the south coast of Korea.

**Table S1.** Target compounds, structure, and molecular weight.

Abbreviation	Chemical formula	Molecular weight (g/mol)
As(V)	As <sub>2</sub> O <sub>5</sub>	229.84
As(III)	As <sub>2</sub> O <sub>3</sub>	197.84
DMA	(CH <sub>3</sub> ) <sub>2</sub> AsO <sub>2</sub> Na3H <sub>2</sub> O	214.03
MMA	CH <sub>3</sub> AsNa <sub>2</sub> O <sub>3</sub> 6H <sub>2</sub> O	291.90
AsB	C <sub>5</sub> H <sub>11</sub> AsO <sub>2</sub>	178.06
AsC	C <sub>5</sub> H <sub>14</sub> AsBrO	244.99

**Table S2.** Instrumental operating conditions of HPLC and ICP-MS for arsenic detection.

HPLC	
Parameters	Conditions
HPLC	Agilent 1200 series
Column	CAPCELL PAK C18MG (4.6 × 250 mm, 5 µm)
Column temperature	25 °C
Mobile phase	0.05% (v/v) methanol, 10 mM sodium 1-butane sulfonate, 4 mM malonic acid, 4 mM tetramethyl ammonium hydroxide (TMAH) (pH 2.7, nitric acid)
Flow rate	0.75 mL/min
Injection volume	10 µL
ICP-MS	
Parameters	Conditions
RF Matching	27.12 (MHz)
RF Power	1550 (W)
Auxiliary gas flow	1.0 (L/min)
Nebulize (carrier) gas flow	1.12 (L/min)
Collision cell	He Flow 3.0 (mL/min)
Ion monitored	m/z 75
Lens voltage	10 V
Sampling depth	8.0 mm