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A Method for Quantifying Arsenolipids in Sea Water by HPLC-High Resolution Mass Spectrometry

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Abstract : Trace amounts (ca 1 µg/L, 13 nM) of arsenic are present in sea water mostly as the oxyanion arsenate. In contrast, arsenic is present in marine biota (animals and algae) at very high levels (up to100,000 µg/kg) a significant portion of which is present as lipid-soluble compounds collectively termed arsenolipids. The complex nature of sea water presents an analytical challenge to detect trace compounds and monitor their environmental path. We developed a simple method using liquid-liquid extraction combined with HPLC-High Resolution Mass Spectrometer capable of detecting trace of arsenolipids (99 % of the sample matrix while recovering > 80 % of the six target arsenolipids with limit of detection of 0.003 µg/L.)

Keywords : arsenolipids, sea water, HPLC-high resolution mass spectrometry
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