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Accessory publication

Arsenic compounds in tropical marine ecosystems: similarities between mangrove forest and coral reef

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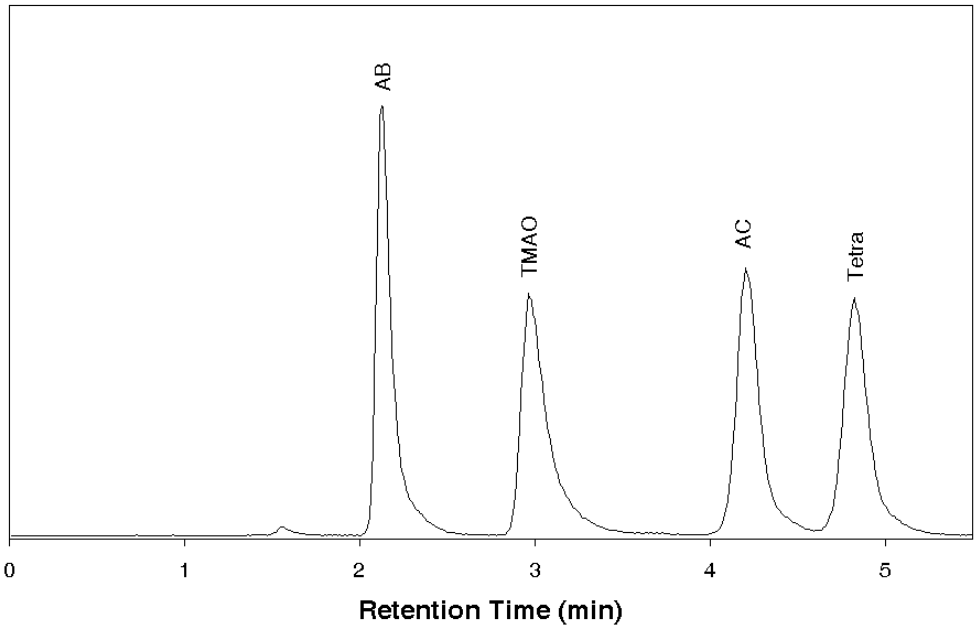

Fig. A1. A mixture of four standard cationic arsenic species (each at 100 µg As L^{-1}). HPLC condition: Supelcosil LC-SCX cation-exchange column (250 × 4.6 mm internal diameter, 5 µm) at 40ºC, mobile phase 20 mM pyridine (pH 2.6) at 1.5 ml min^{-1}. AB, arsenobetaine; TMAO, trimethylarsine oxide; AC, arsenocholine; Tetra, tetramethylarsonium ion.

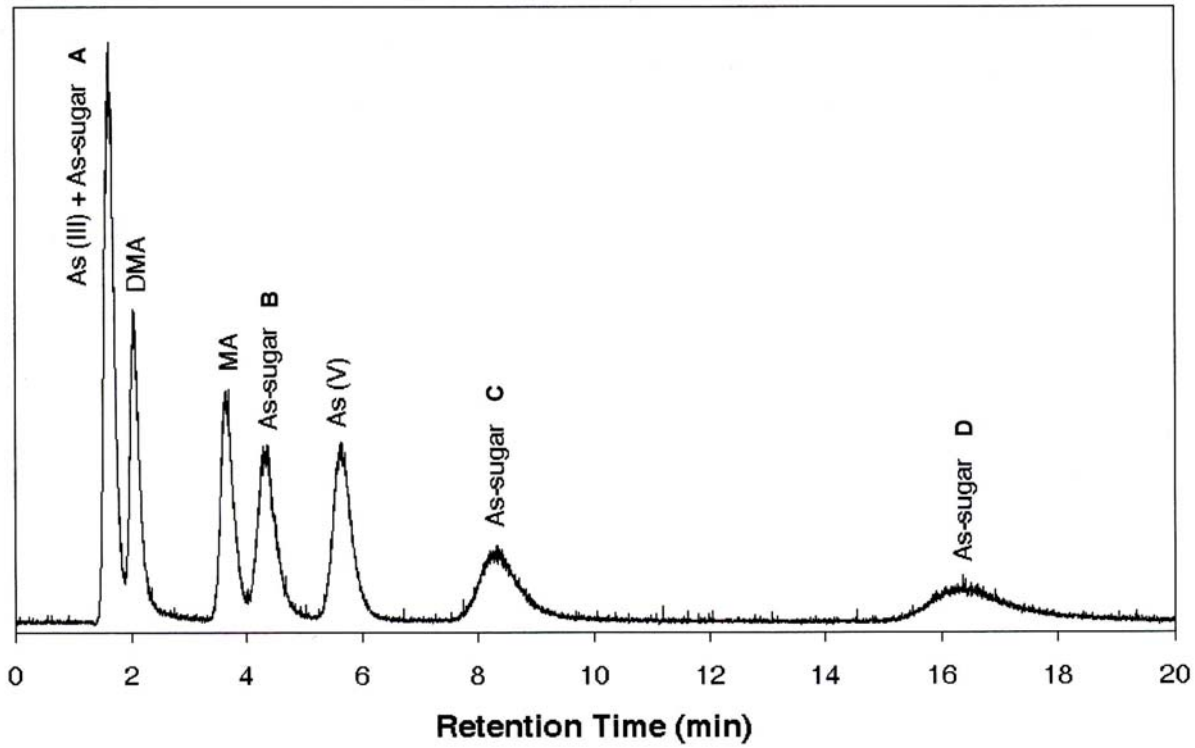

Fig. A2. A mixture of eight standard arsenic species (each at 50 µg As L^{-1}). HPLC condition: Hamilton PRP-X100 anion-exchange column (250 × 4.1 mm, 10 µm) at 40ºC, mobile phase 20 mM $NH_4H_2P0_4$ (pH 5.6) at 1.5 ml min^{-1}.

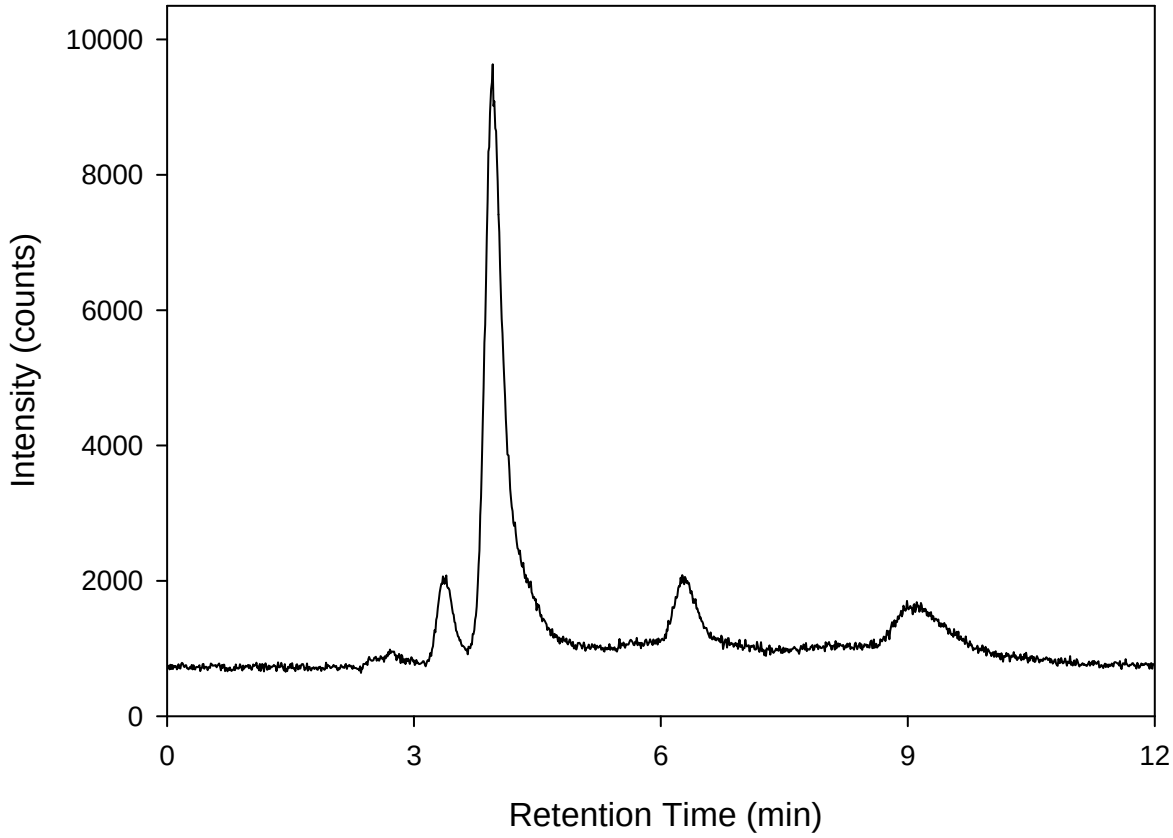

Fig. A3. Extract of leaves of mangrove (*Avicennia officinalis*) from Ao Numbo. HPLC conditions: Agilent anion-exchange column (G3154-6501, 4.6 × 150 mm) at 35°C with mobile phase (1.3 ml min^{-1}) of 10 mM NH_4HCO_3 at pH 10.7. Peaks identified as DMA (3.3 min), As^{III} (4.6 min), MA (6.3 min), and As^{V} (9.1 min) by retention time matching with standards. Samples were run under these conditions mainly to determine As^{III} which cannot be reliably measured by PRP-X100 at pH 5.6 (Fig. A2)

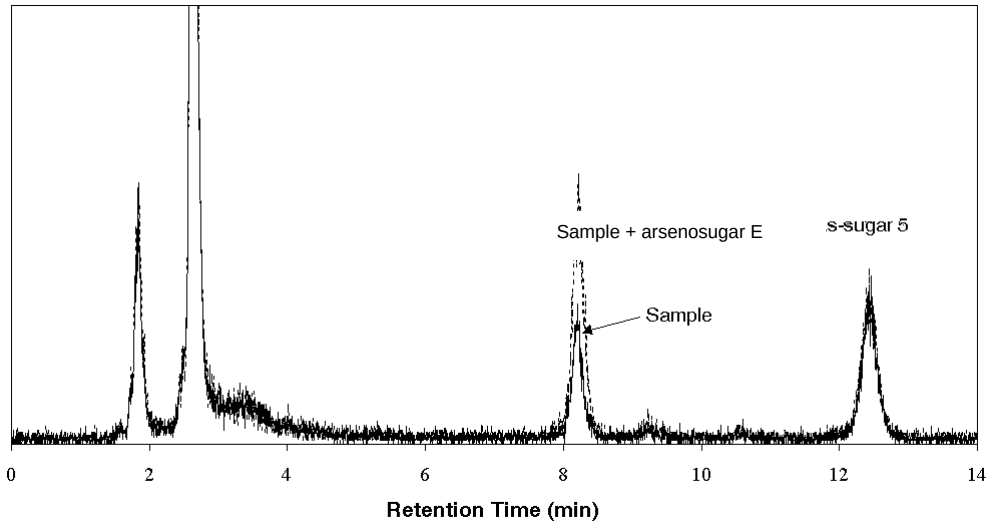

Fig. A4. Cation-exchange chromatogram (HPLC-ICPMS) of extract from the gastropod *Telescopium telescopium* (solid line) and *Telescopium telescopium* extract co-injected with standard arsenosugar E (dotted line). Chromatographic conditions were: Supelcosil LC-SCX cation-exchange column (250 × 4.6 mm internal diameter, 5 μm) at 40ºC, mobile phase 20 mM pyridine (pH 5) at 1.5 ml min^{-1}.

Sample + arsenosugar E

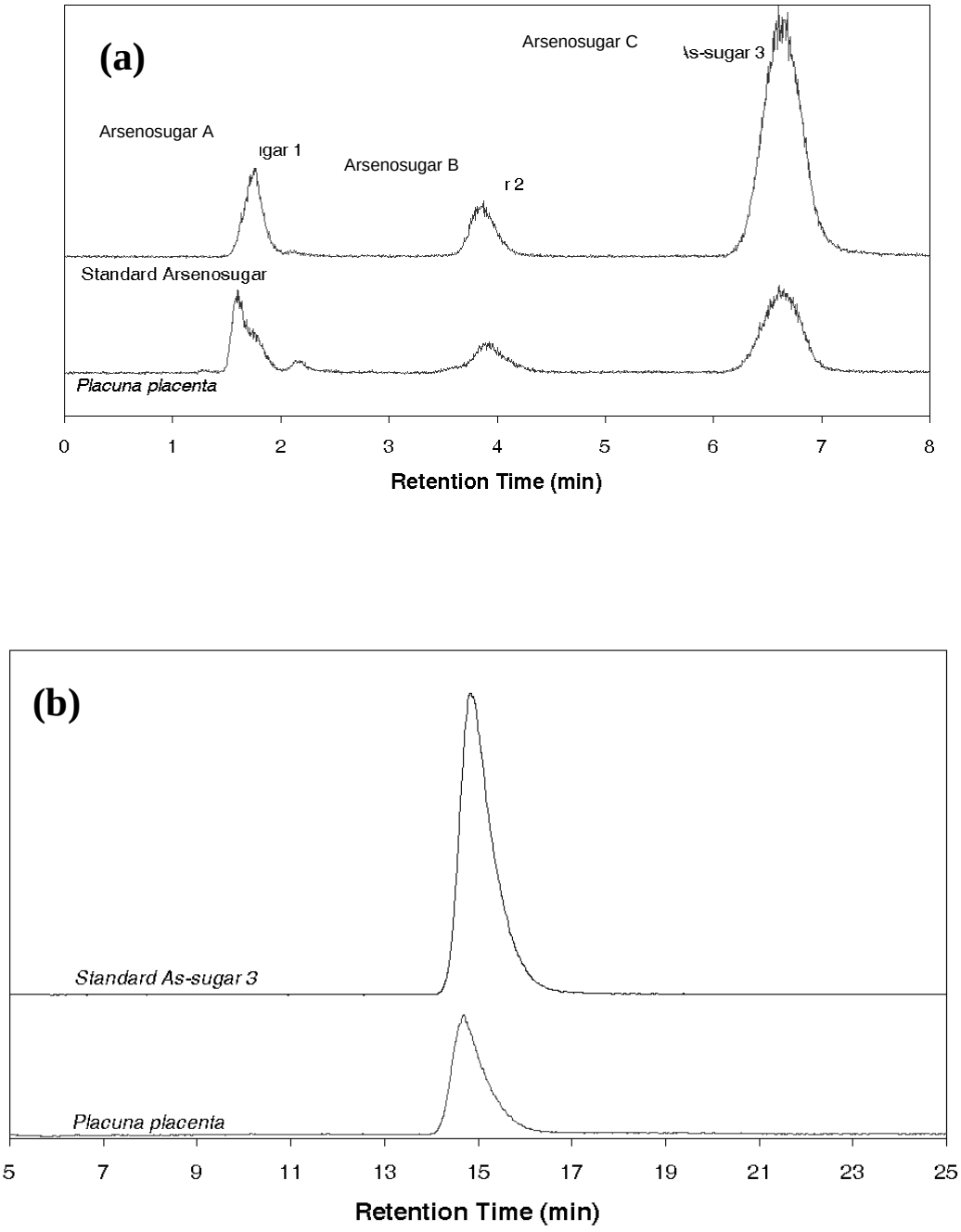

Fig. A5. Anion-exchange chromatograms (HPLC/ICPMS) for three standard arsenosugars (top) and the extract from *Placuna placenta* (bottom) (a). Chromatographic conditions: Hamilton PRP-X100 anion-exchange column (250 × 4.1 mm, 10 µm) at 40ºC, mobile phase 20 mM $NH_4H_2P0_4$ (pH 5.6) at 1.5 ml min^{-1}. Anion-exchange chromatogram (HPLC/electrospray MS) of the extract from the bivalve *Placuna placenta* (b). Chromatography was performed using a PRP-X100 anion-exchange column (250 × 4.1 mm) equilibrated with 10% methanol in 20 mM NH_4HCO_3, pH 10.3 (flow rate 0.4 ml min^{-1}); and the compound was detected at *m/z* 393 (MH^+) with a Hewlett Packard G1946A single quadrupole mass spectrometer using electrospray ionisation in positive ion mode.