Developing microwave-assisted ionic liquid microextraction for the detection and tracking of hydrophobic pesticides in complex environmental matrices

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Table S1 Pyrethroid retention times observed under our HPLC experimental conditionsa

<table>
<thead>
<tr>
<th>Pyrethroid</th>
<th>Peak 1</th>
<th>Peak 2</th>
<th>Peak 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALLE</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CYPE</td>
<td>24</td>
<td>9.2b</td>
<td>6.4b</td>
</tr>
<tr>
<td>PERM</td>
<td>27</td>
<td>31</td>
<td></td>
</tr>
</tbody>
</table>

a The mobile phase consisted of a 70:30 (v/v) mixture of acetonitrile:water. b These peaks are thought to arise from CYPE degradation products.

Fig. S1 HPLC chromatogram of pyrethroids (each present at a concentration of 25 mg/L) using acetonitrile-water (70:30, v/v) as the mobile phase at a flow rate of 1 mL/min and a column temperature of 25 °C. CYPE peaks 2 and 3 are believed to originate from degradation of the parent CYPE which in turn elutes as CYPE peak 1.
Fig. S2 (A) Solution temperature following 60 s of microwave irradiation at various powers. (B) Solution temperatures resulting from microwave heating @200 W for different durations. For both panels, the pyrethroid concentrations were 25 mg/L and the IL used was [N\text{M888}][\text{TF}_2\text{N}].
Fig. S3 Typical chromatograms after DLLME of prepared tap water (black profile), DLLME of tap water spiked with pyrethroids (red), and MADLLME of tap water spiked with pyrethroids (green). The pyrethroid concentrations used were 25 mg/L and the IL tested here was \([\text{N}_{8881}]\text{[Tf}_2\text{N]}\). For MADLLME, the microwave conditions followed were 200 W of power for a duration of 60 s.

Fig. S4 Typical chromatograms after DLLME of prepared honey (black curve), DLLME of honey spiked with pyrethroids (red), and MADLLME of honey spiked with pyrethroids (green). The pyrethroid concentrations used were 25 mg/L each and the IL tested here was \([\text{N}_{8881}]\text{[Tf}_2\text{N]}\). For MADLLME, the microwave conditions followed were 200 W of power for a duration of 60 s.
**Fig. S5** Typical chromatograms after DLLME of prepared apple (black curve), DLLME of apple spiked with pyrethroids (red line), and MADLLME of apple spiked with pyrethroids (green). The pyrethroid concentrations used were 25 mg/L each and the IL tested here was $[\text{N}_{8881}][\text{Tf}_2\text{N}]$. For MADLLME, the microwave conditions followed were 200 W of power for a duration of 60 s.

**Fig. S6** Typical chromatograms after DLLME of prepared grape (black profile), DLLME of grape spiked with pyrethroids (red line), and MADLLME of grape spiked with pyrethroids (green). The pyrethroid concentrations used were 25 mg/L each and the IL tested here was $[\text{N}_{8881}][\text{Tf}_2\text{N}]$. For MADLLME, the microwave conditions followed were 200 W of power for a duration of 60 s.
**Fig. S7** Typical chromatograms following DLLME of prepared peach (black line), DLLME of peach spiked with pyrethroids (red line), and MADLLME of peach spiked with pyrethroids (green profile). The pyrethroid concentrations were 25 mg/L and the IL employed was [N₈₄₈₁][Tf₂N]. For MADLLME, the microwave power was 200 W for a microwave time 60 s.