

## ELECTRONIC SUPPLEMENTARY INFORMATION

### The application of amino acid ionic liquids as additives in the ultrasound-assisted extraction of plant material

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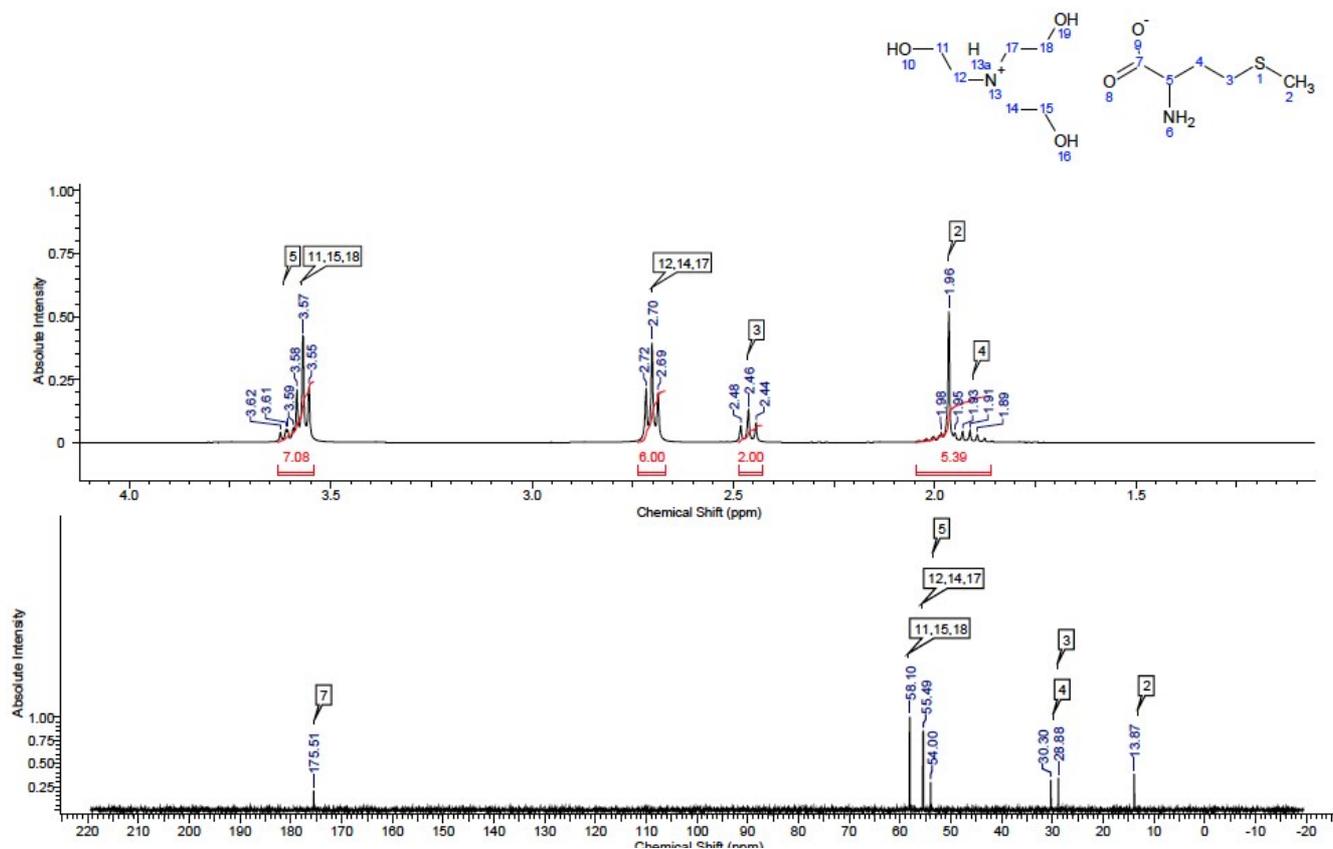
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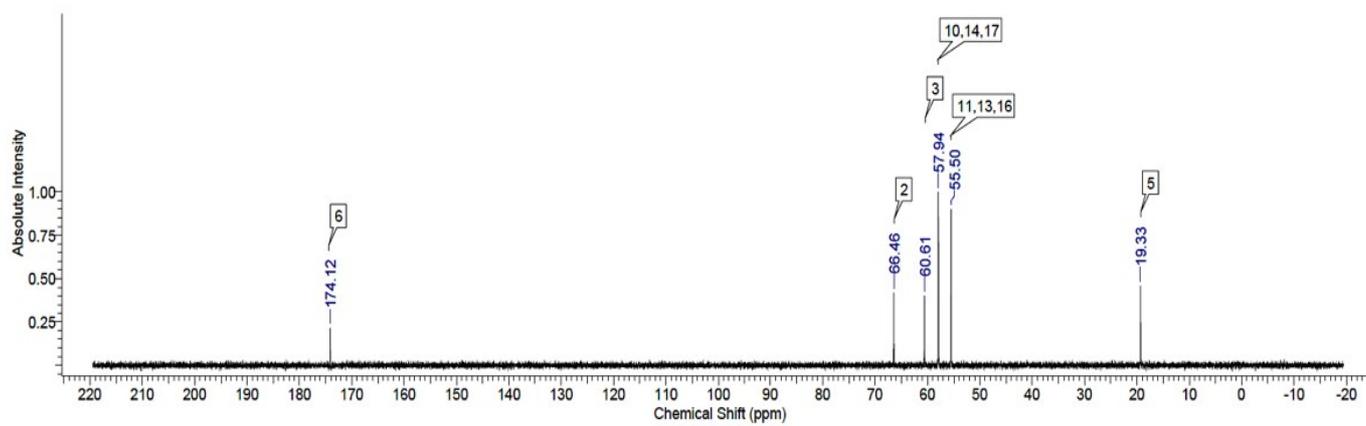
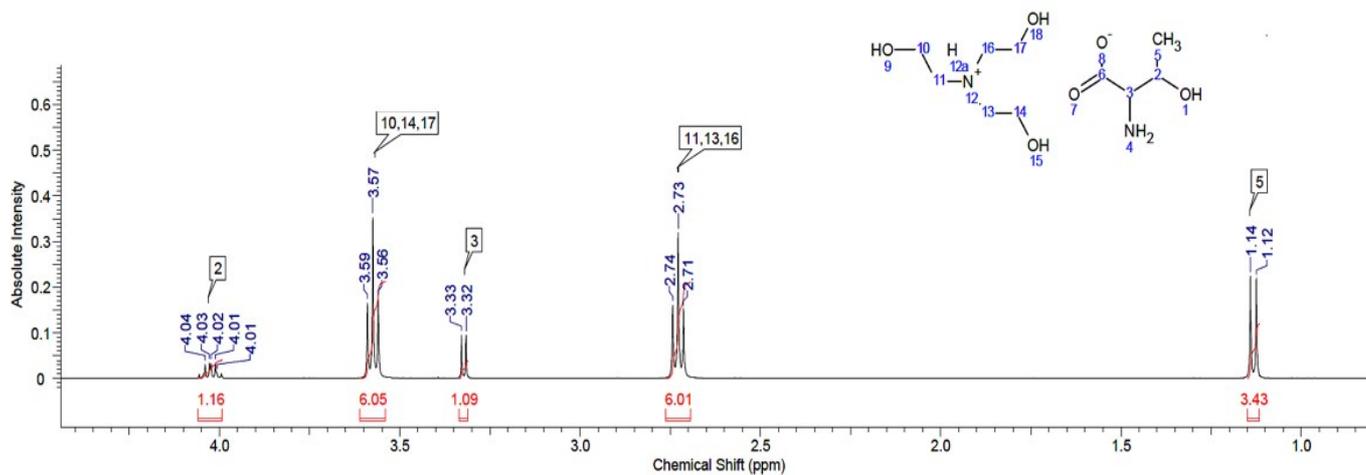
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# 1. COPIES OF $^1\text{H}$ NMR AND $^{13}\text{C}$ NMR SPECTRA OF AMINO ACID IONIC LIQUID



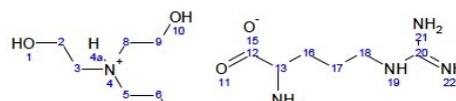
$^1\text{H}$  NMR (upper) and  $^{13}\text{C}$  NMR (bottom) spectra of tris(2-hydroxyethyl)ammonium L-methionate, [TEAH]<sup>+</sup>[Met]<sup>-</sup> in D<sub>2</sub>O



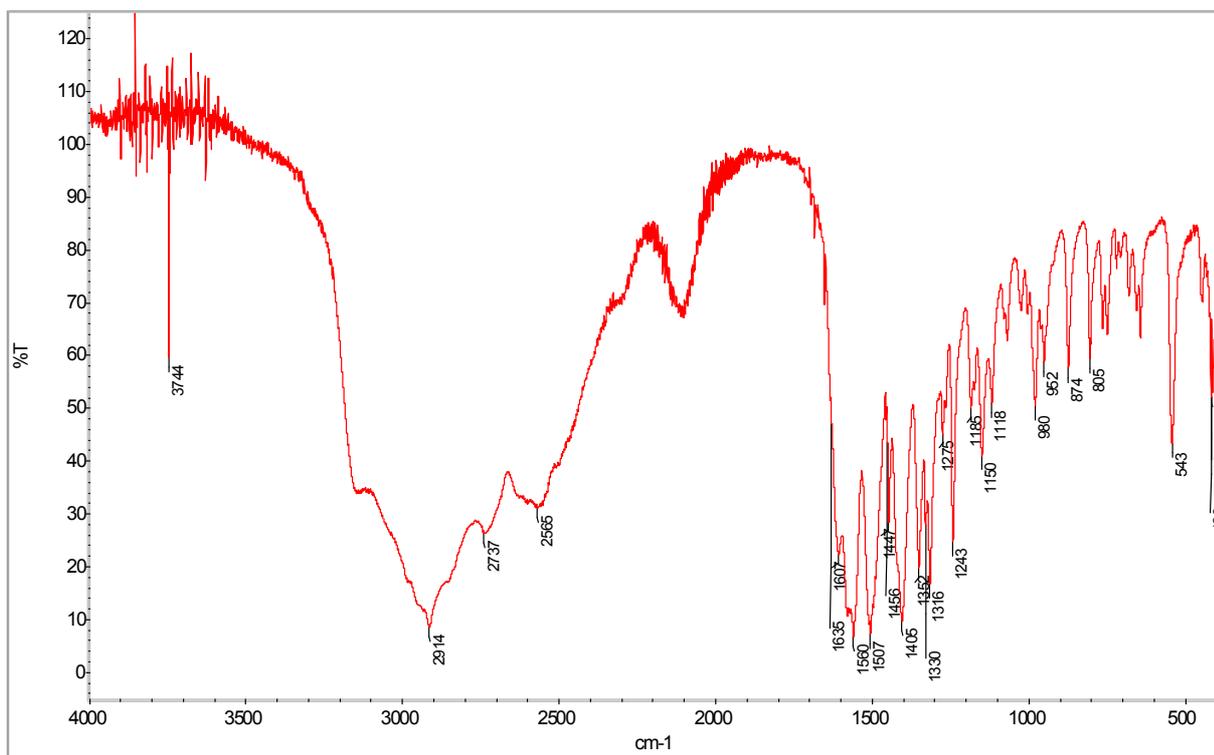
$^1\text{H}$  NMR (upper) and  $^{13}\text{C}$  NMR (bottom) spectra of tris(2-hydroxyethyl)ammonium L-threoninate,  $[\text{TEAH}]^+[\text{Thr}]^-$  in  $\text{D}_2\text{O}$

$^1\text{H}$  NMR (upper) and  $^{13}\text{C}$  NMR (bottom) spectra of tris(2-hydroxyethyl)ammonium L-argininate,  $[\text{TEAH}]^+[\text{Arg}]^-$  in  $\text{D}_2\text{O}$

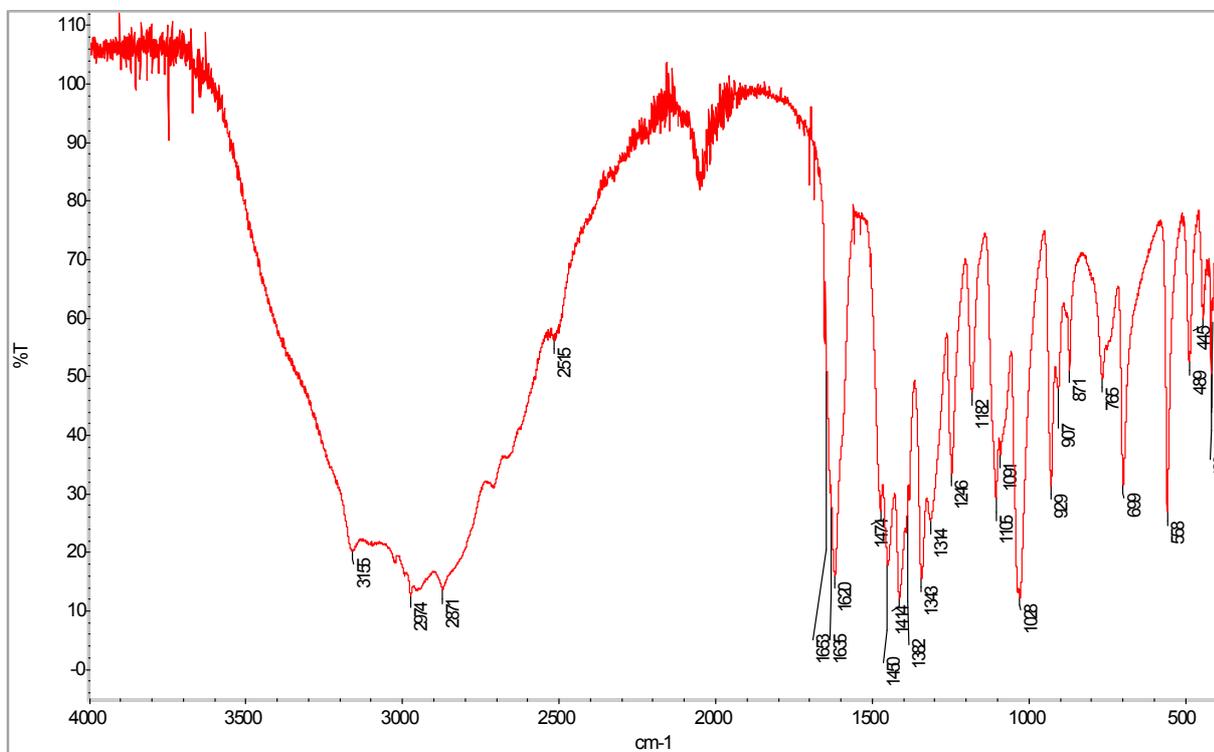
$^1\text{H}$  NMR (upper) and  $^{13}\text{C}$  NMR (bottom) spectra of tris(2-hydroxyethyl)ammonium L-isoleucinate,  $[\text{TEAH}]^+[\text{Ile}]^-$  in  $\text{D}_2\text{O}$



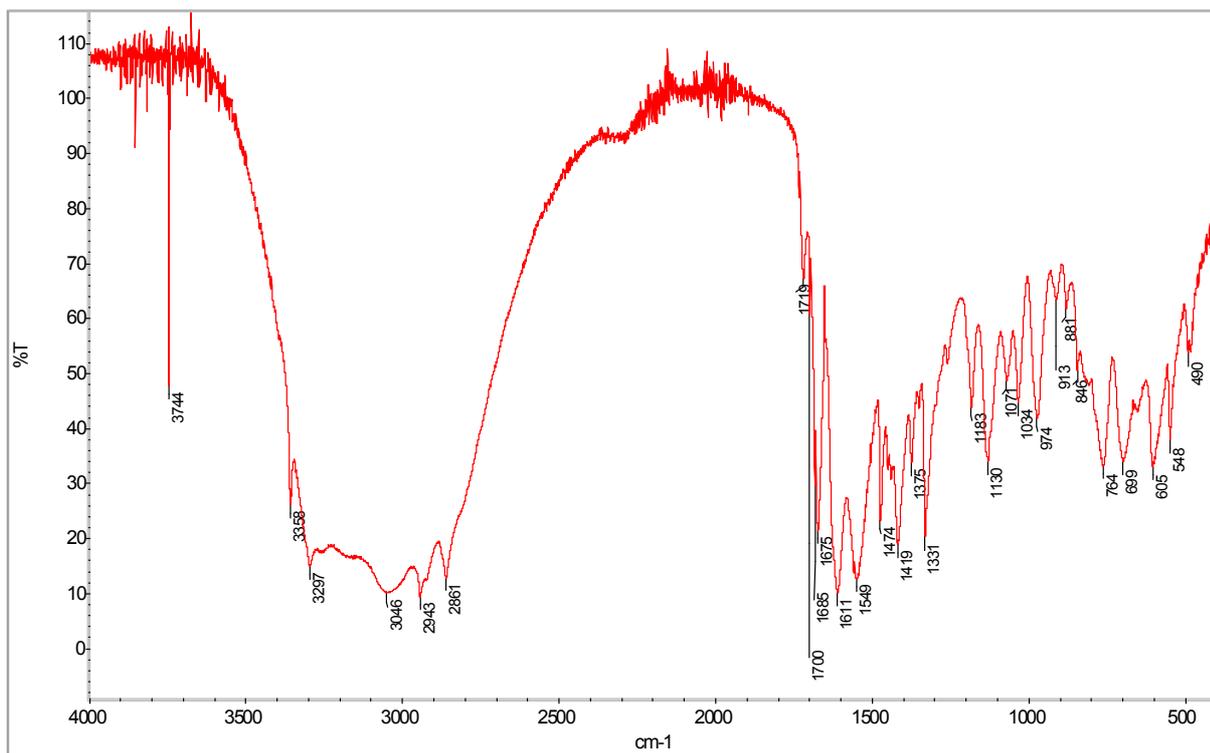
## 2. COPIES OF FT-IR SPECTRA OF AMINO ACID IONIC LIQUIDS



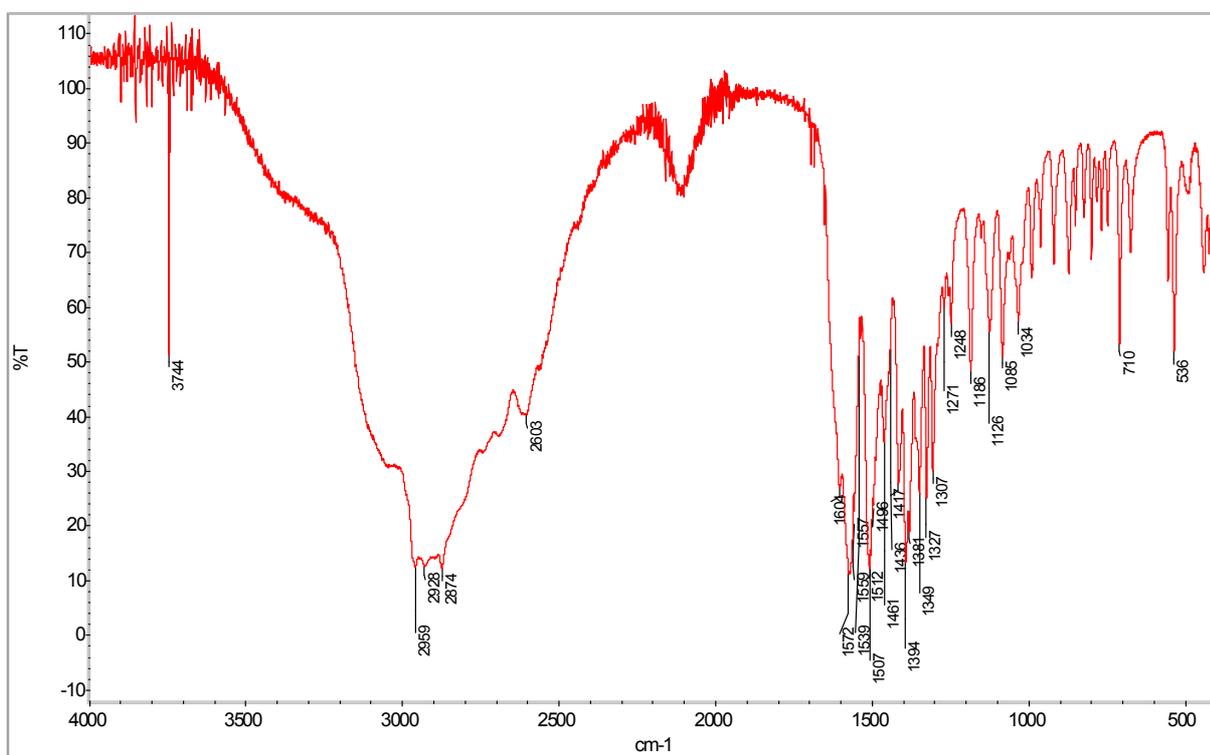
The FT-IR spectra of tris(2-hydroxyethyl)ammonium L-methioninate, [TEAH]<sup>+</sup>[Met]<sup>-</sup>



The FT-IR spectra of tris(2-hydroxyethyl)ammonium L-threoninate, [TEAH]<sup>+</sup>[Thr]<sup>-</sup>

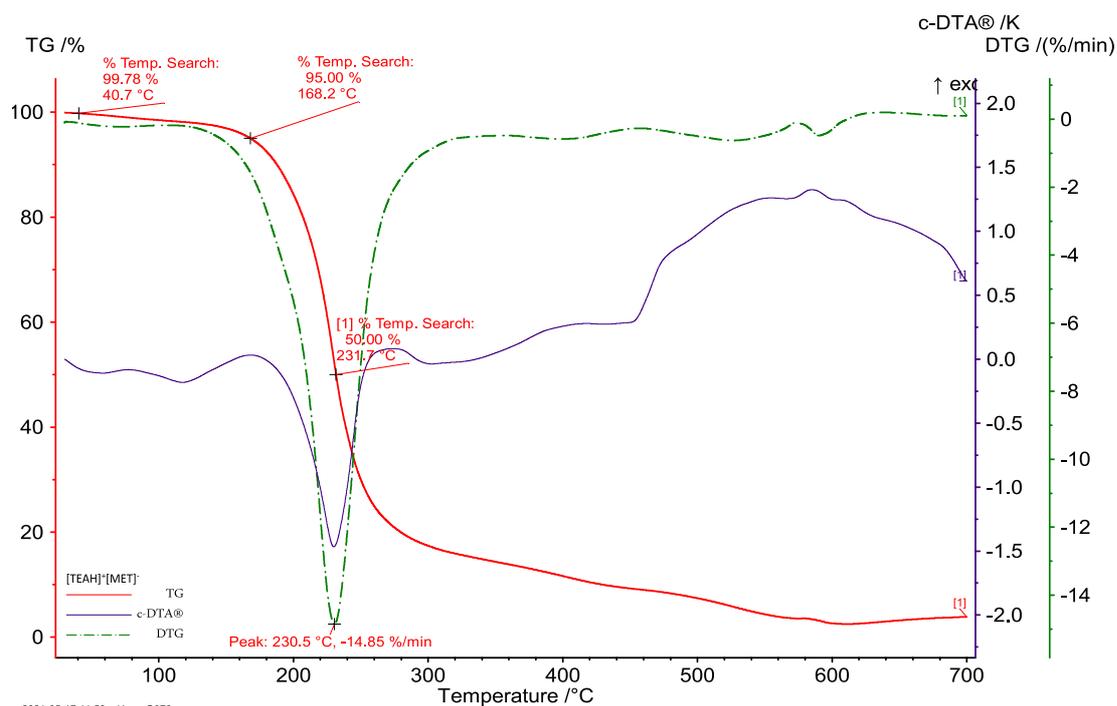


The FT-IR spectra of tris(2-hydroxyethyl)ammonium L-argininate, [TEAH]<sup>+</sup>[Arg]<sup>-</sup>

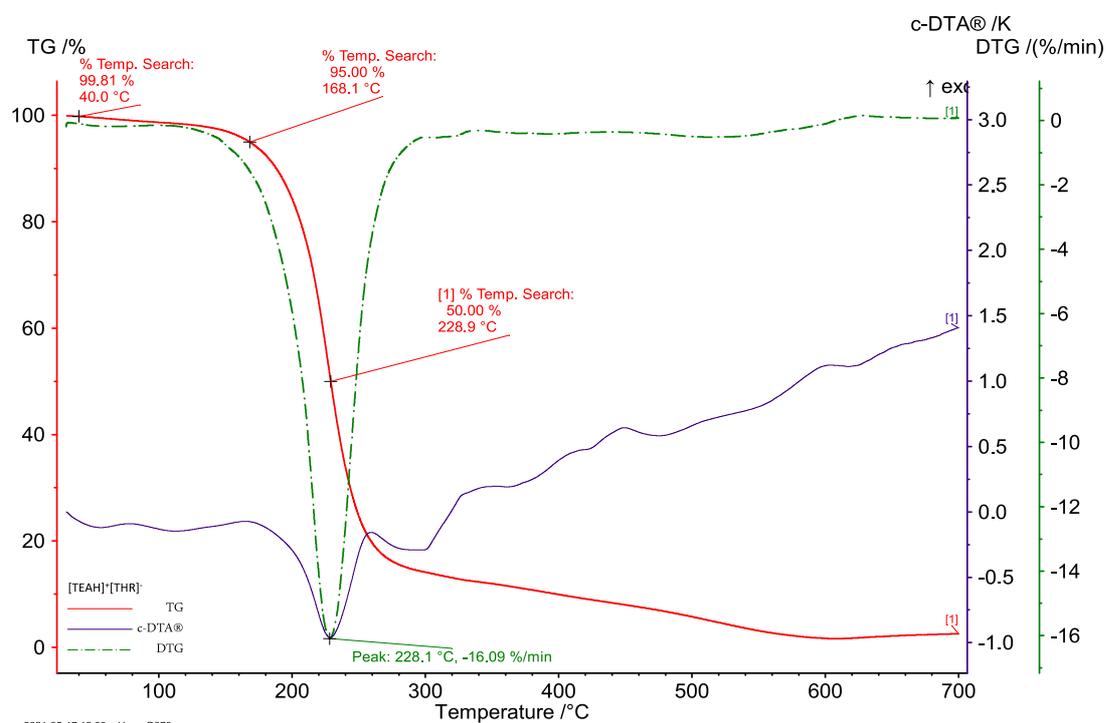


The FT-IR spectra of tris(2-hydroxyethyl)ammonium L-isoleucinate, [TEAH]<sup>+</sup>[Ile]<sup>-</sup>

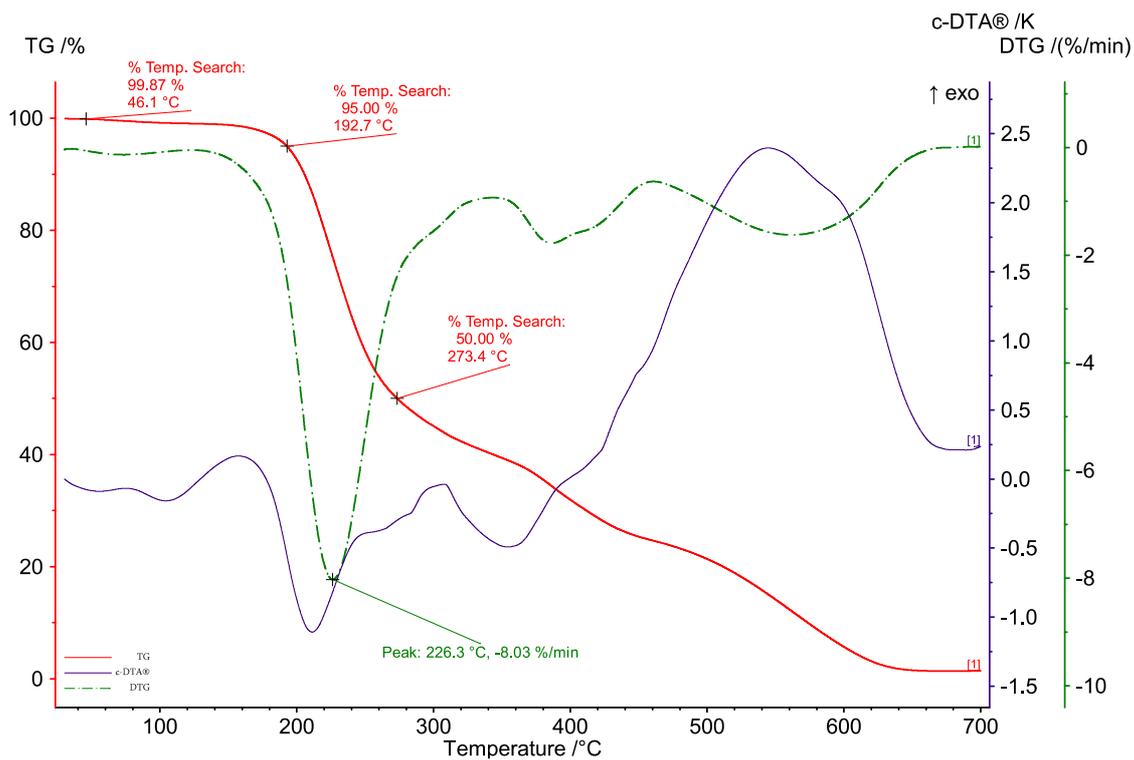
### 3. COPIES OF CURVES FROM THERMOGRAVIMETRIC ANALYSIS OF AMINO ACID IONIC LIQUIDS



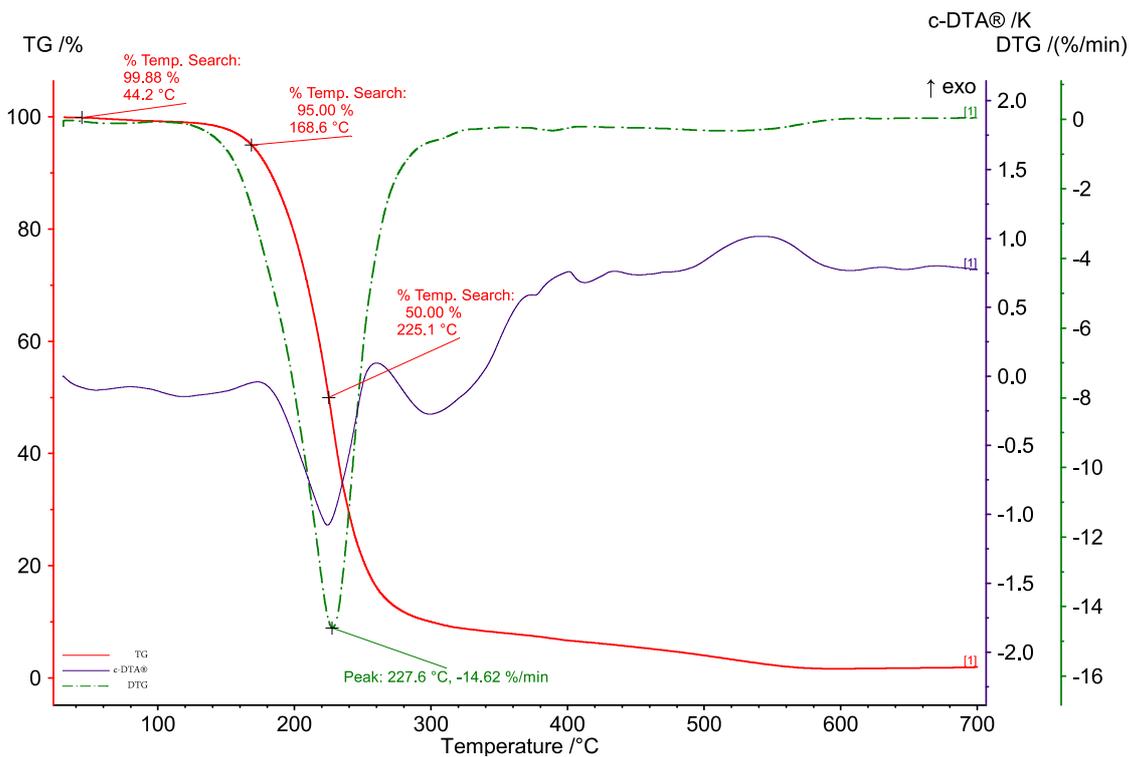
The TG, DTG and c-DTA curves of tris(2-hydroxyethyl)ammonium L-methioninate, [TEAH]<sup>+</sup>[Met]<sup>-</sup>



The TG, DTG and c-DTA curves of tris(2-hydroxyethyl)ammonium L-threoninate, [TEAH]<sup>+</sup>[Thr]<sup>-</sup>

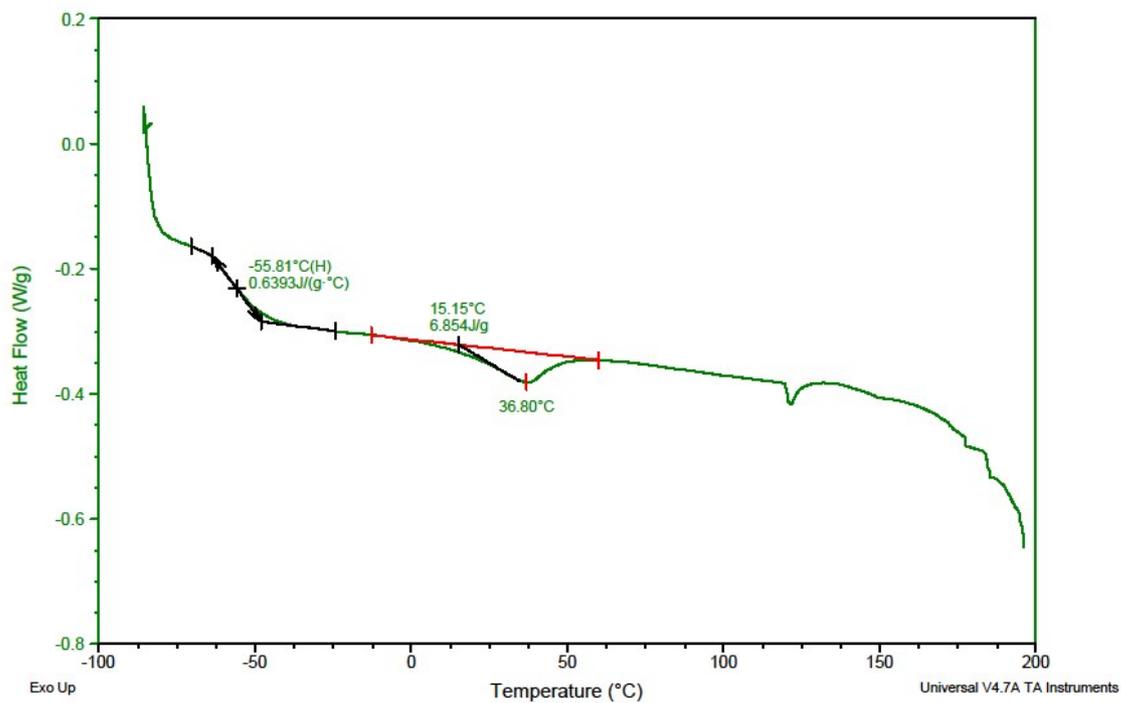


The TG, DTG and c-DTA curves of tris(2-hydroxyethyl)ammonium L- arginate, [TEAH]<sup>+</sup>[Arg]<sup>-</sup>

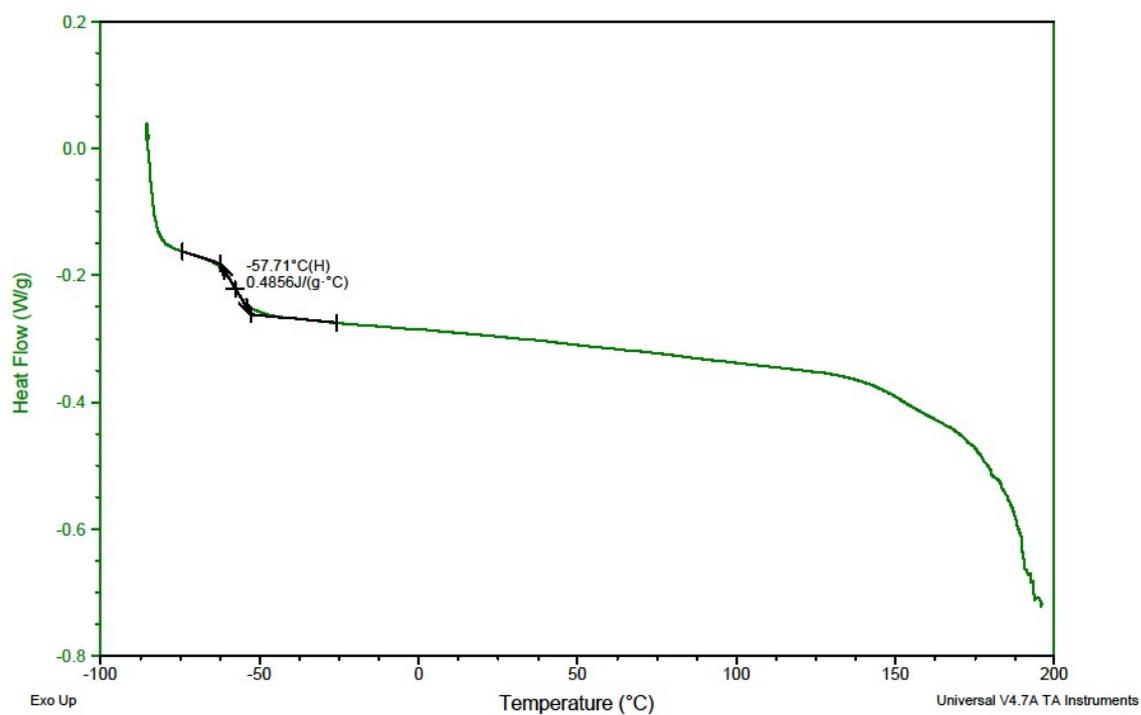


The TG, DTG and c-DTA curves of tris(2-hydroxyethyl)ammonium L- isoleucinate, [TEAH]<sup>+</sup>[Ile]<sup>-</sup>

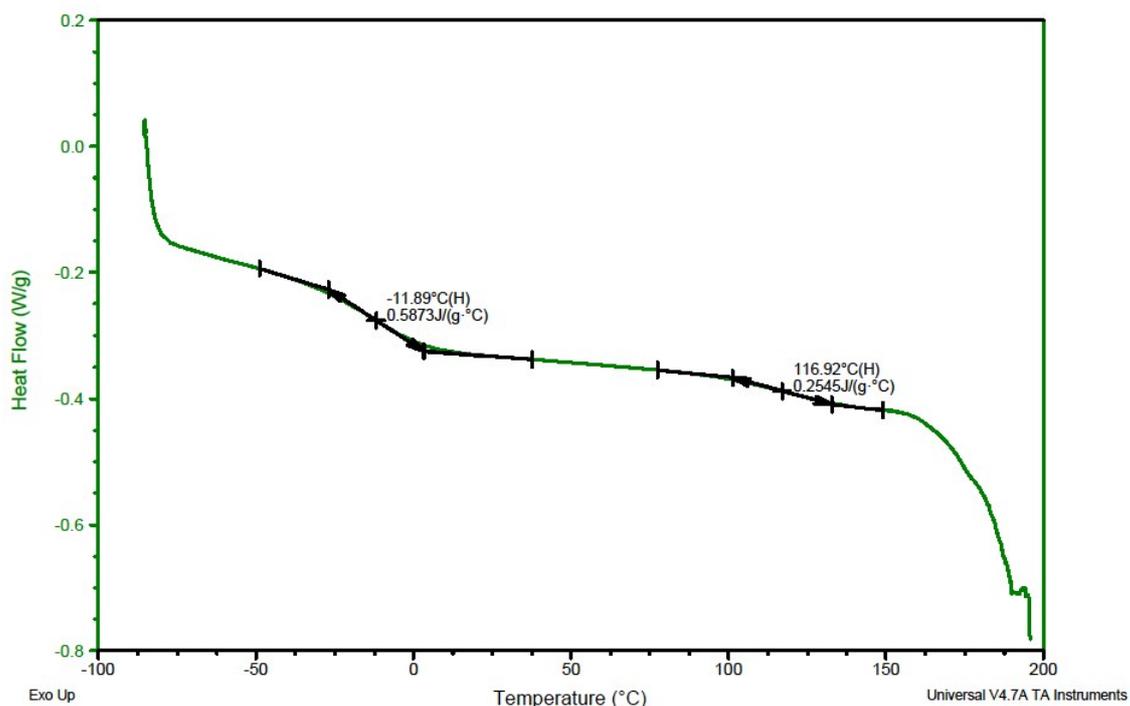
#### 4. COPIES OF CURVES FROM DSC ANALYSIS OF AMINO ACID IONIC LIQUIDS



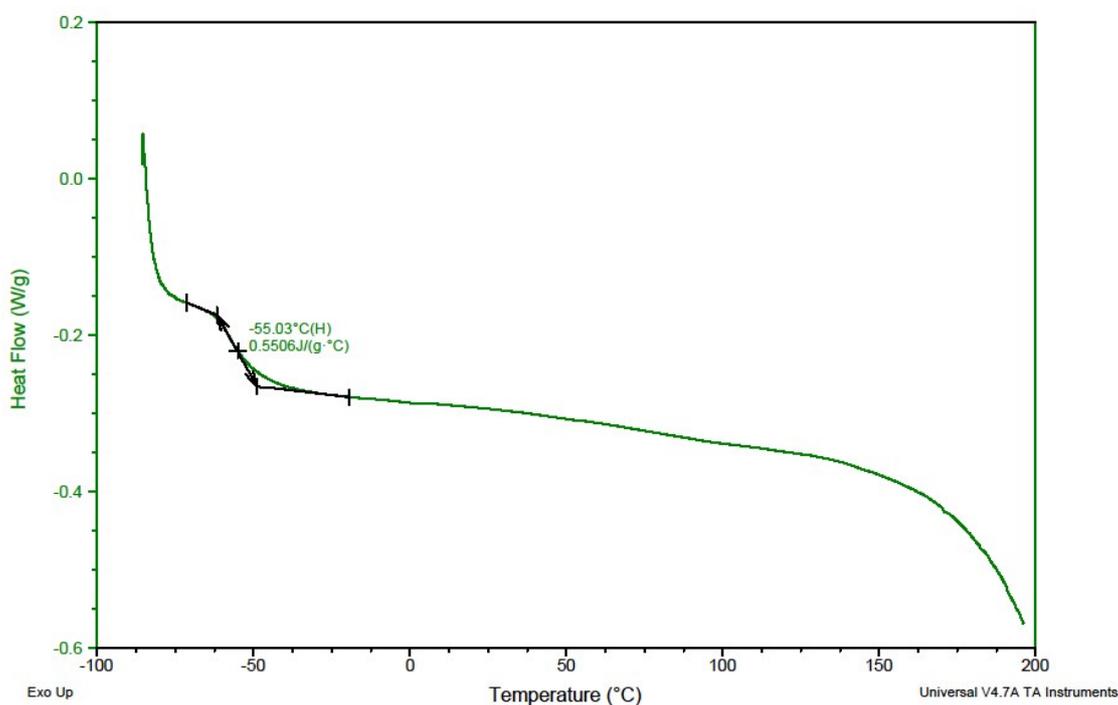
The DSC curve of tris(2-hydroxyethyl)ammonium L-methioninate, [TEAH]<sup>+</sup>[Met]<sup>-</sup>, registered in the heating mode from -90°C to 200°C



The DSC curve of tris(2-hydroxyethyl)ammonium L-threoninate, [TEAH]<sup>+</sup>[Thr]<sup>-</sup>, registered in the heating mode from -90°C to 200°C



The DSC curve of tris(2-hydroxyethyl)ammonium L-argininate, [TEAH]<sup>+</sup>[Arg]<sup>-</sup>, registered in the heating mode from -90°C to 200°C



The DSC curve of tris(2-hydroxyethyl)ammonium L-isoleucinate, [TEAH]<sup>+</sup>[Ile]<sup>-</sup>, registered in the heating mode from -90°C to 200°C