

Electronic Supplementary Information (ESI) for

Enhanced solubilization and extraction of hydrophobic bioactive compounds using water/ionic liquid mixtures

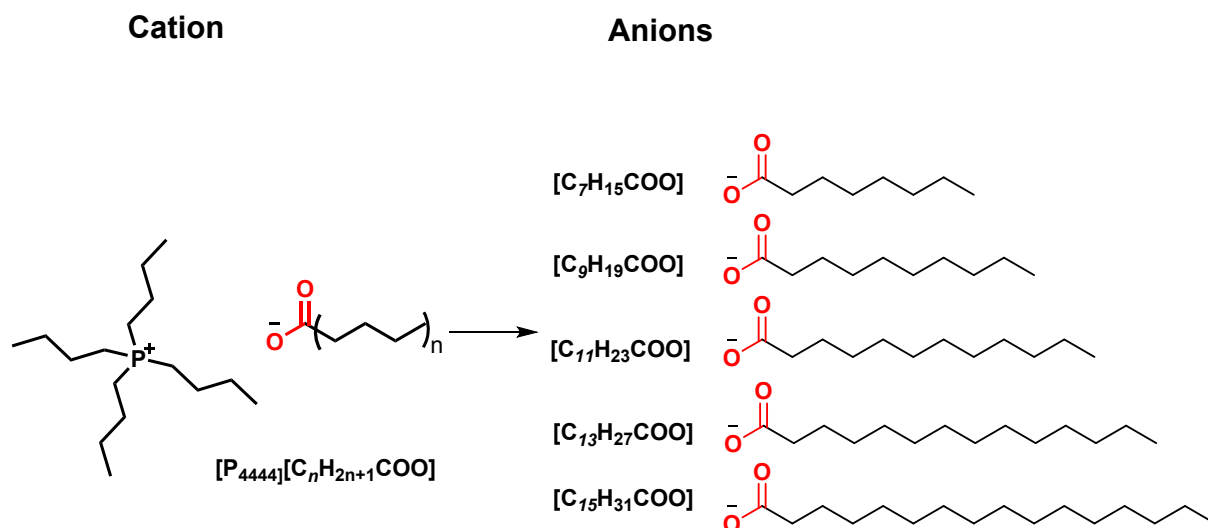
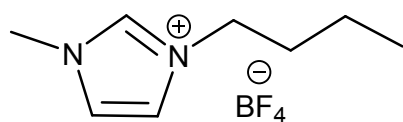
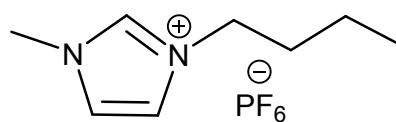


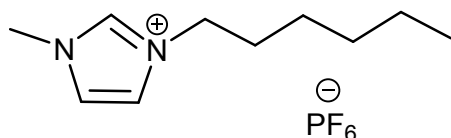
Fig. S1 Molecular structures of LCC-IL



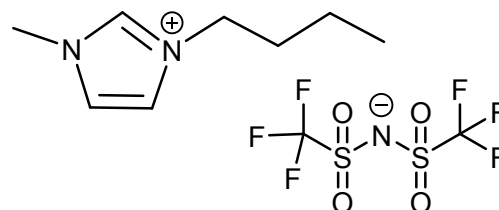
1-butyl-3-methylimidazolium
tetrafluoroborate
[BMIm]BF₄



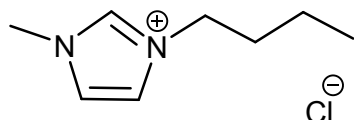
1-butyl-3-methylimidazolium
hexafluorophosphate
[BMIm]PF₆



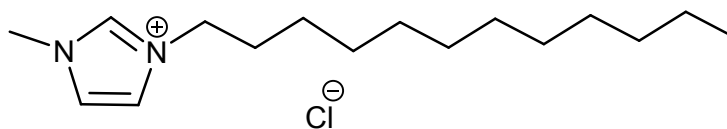
1-hexyl-3-methylimidazolium
hexafluorophosphate
[HMIm]PF₆



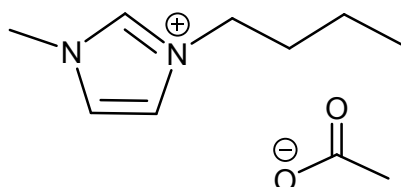
1-butyl-3-methylimidazolium
bis(trifluoromethylsulfonyl)imide
[BMIm]Tf₂N



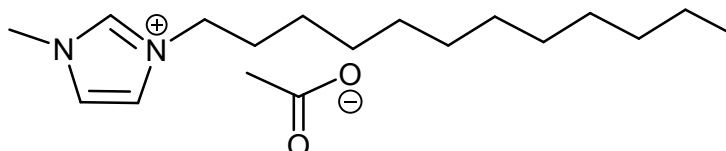
1-butyl-3-methylimidazolium
chloride
[BMIm]Cl



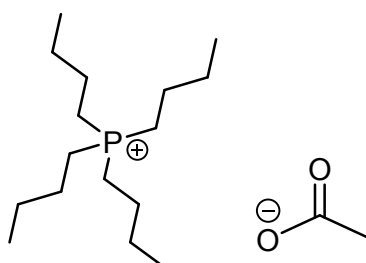
1-dodecyl-3-methylimidazolium
chloride
[C₁₂MIm]Cl



1-butyl-3-methylimidazolium
acetate
[BMIm][CH₃COO]



1-dodecyl-3-methylimidazolium
acetate
[C₁₂MIm][CH₃COO]



Tetrabutylphosphonium
acetate
[P₄₄₄₄][CH₃COO]

Fig. S2 Structures of other ILs used and the corresponding abbreviations.

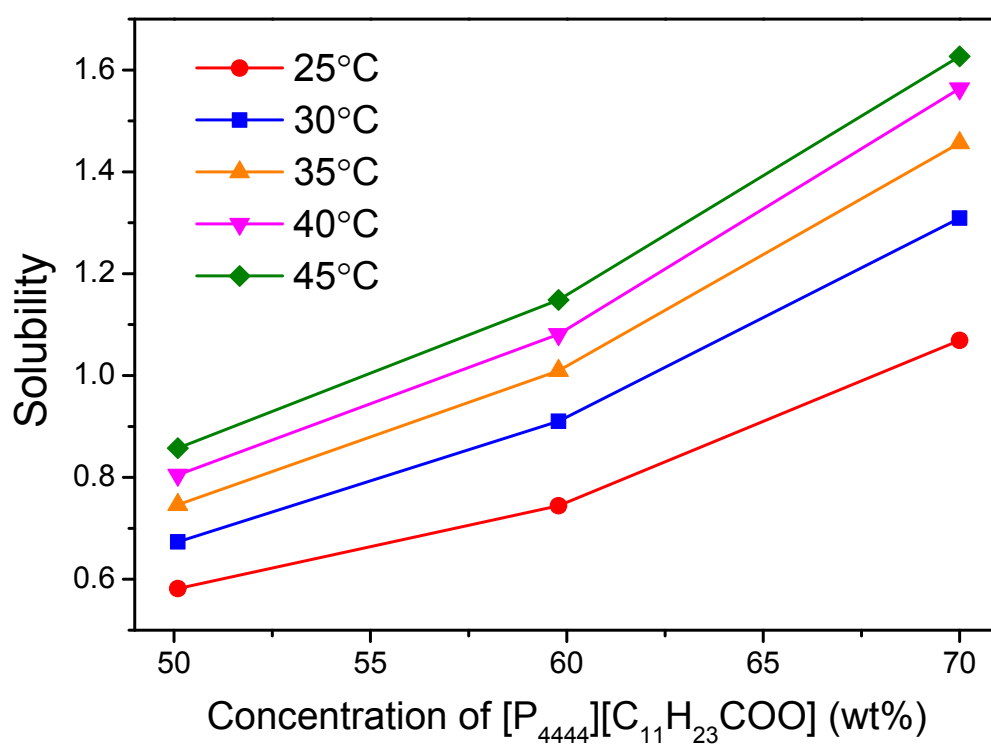


Fig. S3 Mass solubility of α -tocopherol in aqueous solutions of $[P_{4444}][C_{11}H_{23}COO]$ with higher concentration at temperature from 25-45°C.

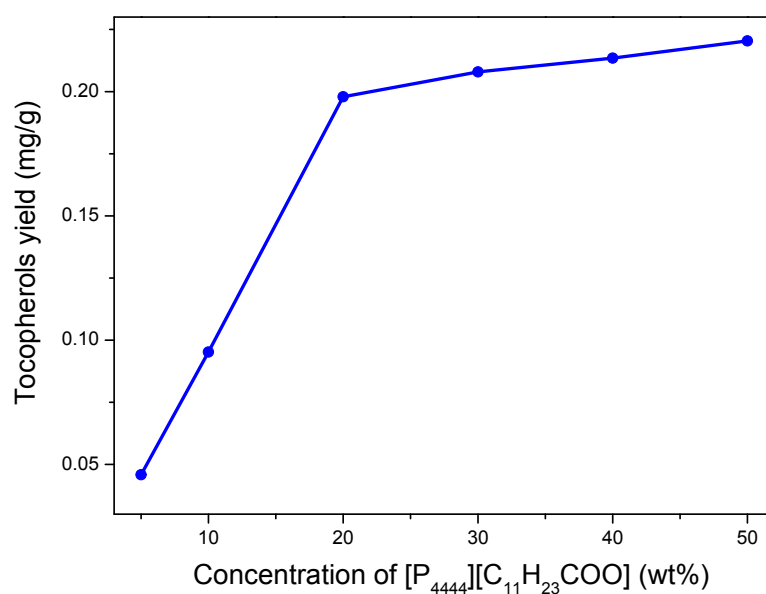


Fig. S4 Yield of tocopherols extracted from soybean flour ($T = 40^{\circ}C$, S/L ratio = 1:20, $t = 2h$) in

water/[P₄₄₄₄][C₁₁H₂₃COO] mixtures with IL's concentration from 0.1-1.0M (5 to 50 wt%). The line between points is provided as a guide to the eye.

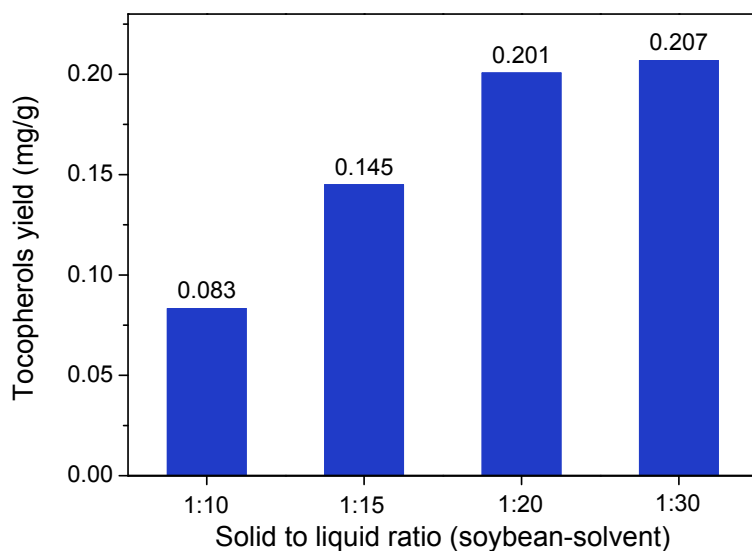


Fig. S5 Yield of tocopherols extracted from soybean flour ($T = 40^{\circ}\text{C}$, $x = 20$ wt%, $t = 2\text{h}$) in water/[P₄₄₄₄][C₁₁H₂₃COO] mixtures with solid to liquid ratio from 1:10-1:30.

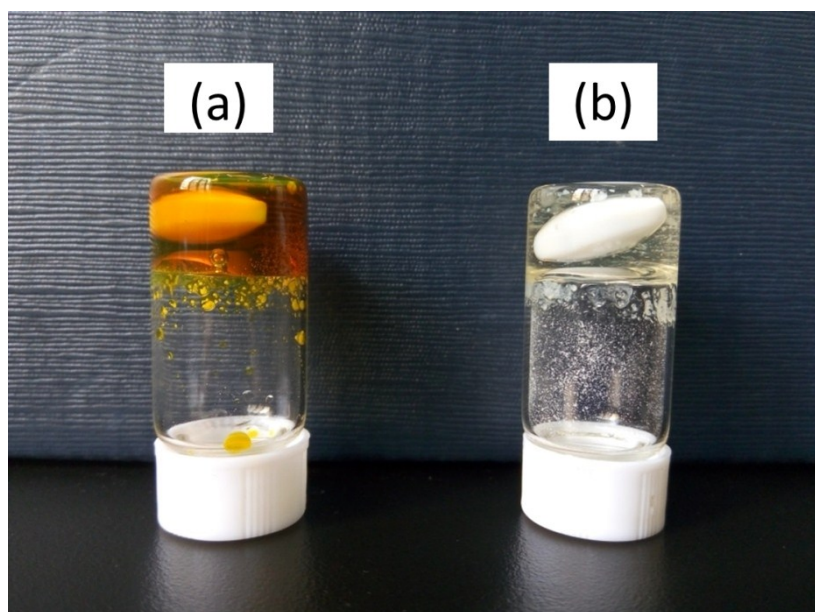


Fig. S6 Visual depiction of gelation after a certain amount of HBCs dissolving in neat [P₄₄₄₄][C₁₁H₂₃COO]

at 25°C. Photograph of the $[P_{4444}][C_{11}H_{23}COO]/HBCs$ sample (a) 25% rutin and (b) 30% ginkgolides.