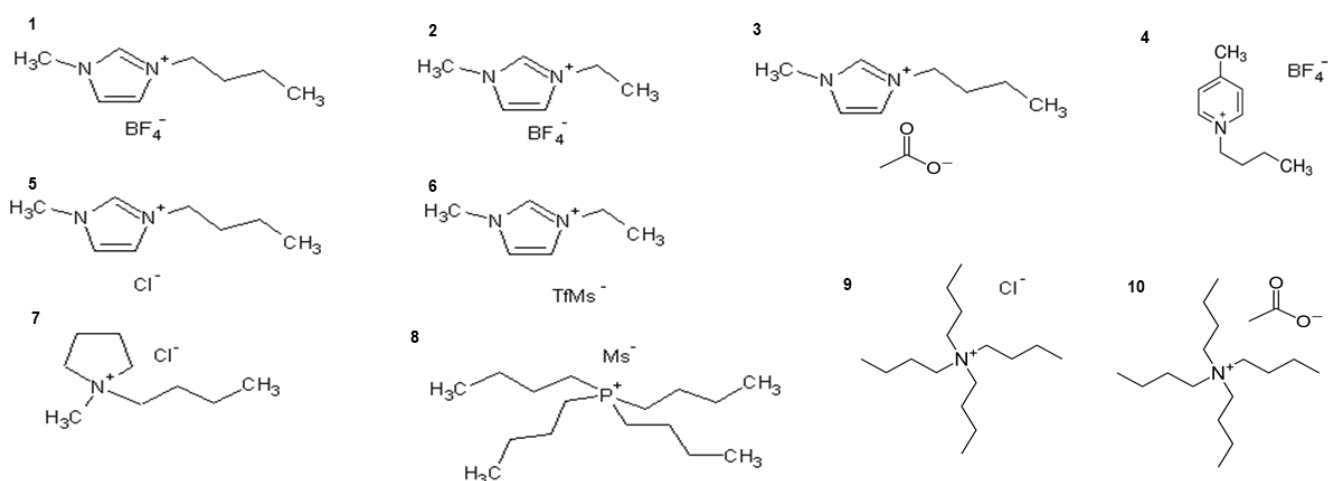


## Supplementary material

**Figure 1:** Chemical structures of the studied ILs. 1: 1-butyl-3-methylimidazolium tetrafluoroborate (bmim [BF<sub>4</sub>]); 2: 1-ethyl-3-methylimidazolium tetrafluoroborate (emim [BF<sub>4</sub>]); 3: 1-butyl-3-methylimidazolium acetate (bmim [Ac]); 4: 1-butyl-4-methylpyridinium tetrafluoroborate (bmpy [BF<sub>4</sub>]); 5: 1-butyl-3-methylimidazolium chloride (bmim [Cl]); 6: 1-ethyl-3-methylimidazolium trifluoromethanesulfonate (emim [TfMs]); 7: 1-butyl-1-methylpyrrolidinium chloride (bmpyr [Cl]); 8: tetrabutylphosphonium methanesulfonate (tbph [Ms]); 9: tetrabutylammonium chloride (tba [Cl]); 10: tetrabutylammonium acetate (tba [Ac])



**Figure 2:** Chemical structures of the studied IL-APIs. 1: Benzethonium docusate; 2: benzethonium salicylate; 3: Lithium bistriflimide; 4: benzethonium bistriflimide; 5: 1-ethyl-3-methylimidazolium salicylate; 6: benzethonium chloride; 7: sodium salicylate; 8: benzalkonium salicylate; 9: trihexyltetradecylphosphonium docusate; 10: trihexyltetradecylphosphonium chloride; 11: tributylmethylphosphonium salicylate.  
 \*  $n = 8, 10, 12, 14, 16, 18$

