Synthesis of a series of novel dihydro-[1,2,4]triazolo [1,5-\(a\)]pyrimidine scaffolds: Dual solvent-catalyst activity of a low viscous and acid-functionalized ionic liquid

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ABSTRACT

The viscosity of neat ionic liquids is very important for their application in organic synthesis as a solvent because most of the neat ionic liquids are very viscous, which would result in the less efficient mass transfer of reactants. In the present study, a series of novel dihydro-[1,2,4]triazolo[1,5-\(a\)]pyrimidines were prepared using a low viscous and acid-functionalized ionic liquid. Our results showed that new ionic liquid can act as a green solvent and acid catalyst due to low viscosity and acid functionality. The products were simply extracted and the ionic liquid was retrieved several times without reducing its catalytic efficiency. The current application of TMDPS in the one-pot multicomponent reactions as dual solvent-catalyst highlights the importance of low viscous acid-functionalized ionic liquids in organic synthesis, and we hope that further research will be conducted in the future to finding other applications of TMDPS with promising results.

GRAPHICAL ABSTRACT

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