



A simple access to ionic liquids using *N*-substituted imidazole derivatives from Morita-Baylis-Hillman adducts

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INTRODUCTION

Over the years, the imidazole nucleus has attracted considerable interest due to their chemical and biological properties. Imidazole ring is part of the structure of various natural products and drugs. In chemistry are employed as ligand, catalysts for chemical reactions and also as a starting material for the synthesis of ionic liquids.¹

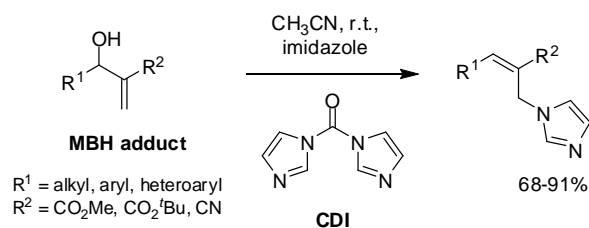
Ionic liquids have an important role in organic synthesis, are used as solvents and catalysts, exerting a profound effect on activity and selectivity of different chemical reactions.²

In this work, we report an approach to the synthesis of ionic liquids using *N*-substituted imidazole from Morita-Baylis-Hillman adducts.

RESULTS AND DISCUSSION

The study began with a synthesis of MBH adducts using a protocol developed by us some years ago.³

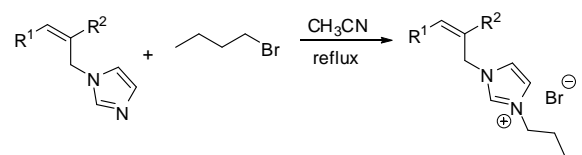
Previously, we described the synthesis of *N*-substituted imidazole derivatives from Morita-Baylis-Hillman adducts using 1,1'-carbonyldiimidazole (CDI). The compounds were obtained in good yields and high *E*-selectivity (Scheme 1).⁴



Scheme 1. *N*-substituted imidazole derivatives from MBH adducts

The *N*-substituted imidazole derivatives were treated with 1-bromobutane in acetonitrile under reflux to give the ionic liquids (Table 1).

Table 1: Ionic liquids from *N*-substituted imidazole derivatives



Entry	R ¹	R ²	Yield(%)
1	3,4,5-OMe-Ph	CO ₂ Me	>95
2	<i>n</i> -Propyl	CO ₂ Me	>95
3	4-Isopropyl-Ph	CO ₂ ^t Bu	>95
4	Tiazolyl	CO ₂ Me	>95
5	4-NO ₂ -Ph	CN	45*
6	4-PivO-Ph	2-Cyclopentanone	85

*Yield after purification in chromatograph column

CONCLUSION

In this communication we demonstrated an easy and straightforward approach to ionic liquids synthesis using *N*-substituted imidazole derivatives from MBH adducts. These *N*-substituted imidazole compounds can be also used as platform to synthesize more complex molecules include asymmetric ionic liquids simply by performing an asymmetric reduction of the conjugated double bond.

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