



SIMPLE AND ECONOMICAL MICHAEL ADDITION OF AROMATIC AMINES TO α,β -UNSATURATED OLEFINS UNDER SOLVENT-FREE CONDITIONS

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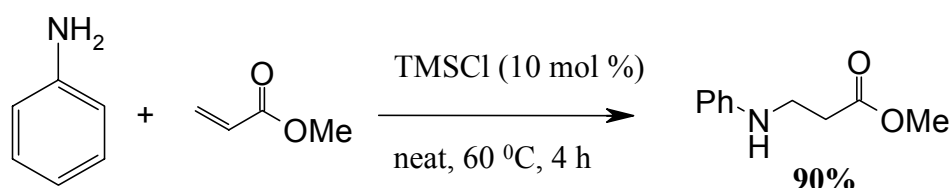
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The synthesis of β -amino esters has gained considerable attention due to their biologically important properties, their occurrence in natural products and their use as precursors for the preparation of β -lactams. The β -amino acids, in free form, show interesting pharmacological properties.

Although Michael addition of aliphatic amines to α,β -unsaturated olefins were known and a number of alternative procedures have been developed in the past few years and in particular, various Lewis acid-induced reactions have been reported. Unfortunately, many of these procedures often require a large excess of reagents, long reaction time and drastic reaction conditions in acetonitrile or 1,2-dichloroethane which are toxic. Furthermore, most of this procedure have been restricted to only aliphatic amines.

On the other hands, development of strategically important processes which are environmentally clean, more efficient, and lead to greater structural variation, with very simple work up procedure and high purity that minimize the formation of waste, and high yields are currently receiving considerable attention. In this context, during our ongoing studies of solvent-free condition,¹ herein we reported a very mild, easy, and catalytic process for Michael addition of aromatic amines to α,β -unsaturated olefins in the presence of catalytic amount of simple and inexpensive chlorotrimethylsilane (TMSCl) in excellent yields.



1. N. Azizi, M.R. Saidi, Tetrahedron 2004, 60, 383–387