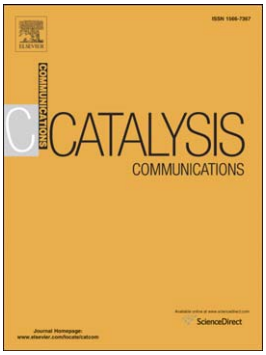

Au-catalyzed domino process synthesis of Imidazo[1,2-*a*]pyridines from 2-aminopyridine and N-tosylhydrazones: An efficient C¡ce:glyph name="sbnd"/¿N bond formation reaction

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Au-Catalyzed Domino Process Synthesis of Imidazo[1,2-a]pyridines From 2-aminopyridine and N-tosylhydrazones: An Efficient C-N bond Formation Reaction

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Abstract: A novel Au-catalyzed domino reaction for the synthesis of imidazo[1,2-a]pyridines from 2-aminopyridine and N-tosylhydrazones has been developed using molecular oxygen. It represents a new strategy for the formation of C-N bonds. This transformation demonstrated a broad tolerance toward the substrates and allowed the generation of a diverse imidazo[1,2-a]pyridine derivatives with good yields.

Keywords: Au-Catalyzed; Imidazo[1,2-a]pyridines; Synthesis; Molecular oxygen

1. Introduction

Transition metal-catalyzed organic reactions are powerful tools for the formation of C-N bonds to synthesize sophisticated N-fused heterocyclic compounds[1-3] which are important chemicals that exhibit a wide range of biological activities.[4-5] Due to their great application value it has attracted significant interest in modern organic chemists. Many novel transformations have been developed to prepare those N-fused heterocyclic compounds, such as indoles,[6-7] pyrroles,[8-9] imidazo[1,2-a]pyridines,[10-11] triazoles,[12-14] pyridines[15-16] et al. Those strategies encouraged us to develop new route for the synthesis of N-fused heterocyclic compounds.

In this context, imidazo[1,2-a]pyridines have emerged as an important class of organic compounds (See Scheme 1) and are frequently used as pharmaceuticals.[17-19] A number of drugs in the market were including the imidazo[1,2-a]pyridine core moiety, such as zolpidem,