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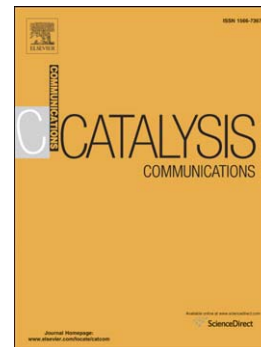
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PII: S1566-7367(16)30407-1
DOI: doi:[10.1016/j.catcom.2016.10.033](https://doi.org/10.1016/j.catcom.2016.10.033)
Reference: CATCOM 4838

To appear in: *Catalysis Communications*

Received date: 12 August 2016
Revised date: 25 October 2016
Accepted date: 26 October 2016



Please cite this article as: Pengfeng Guo, Shuyu Huang, Jiaxian Mo, Xiaoyan Chen, Hangqi Jiang, Weifeng Chen, Hehuan Cai, Haiying Zhan, Au-catalyzed domino process synthesis of Imidazo[1,2-*a*]pyridines from 2-aminopyridine and N-tosylhydrazones: An efficient C–N bond formation reaction, *Catalysis Communications* (2016), doi:[10.1016/j.catcom.2016.10.033](https://doi.org/10.1016/j.catcom.2016.10.033)

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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,

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