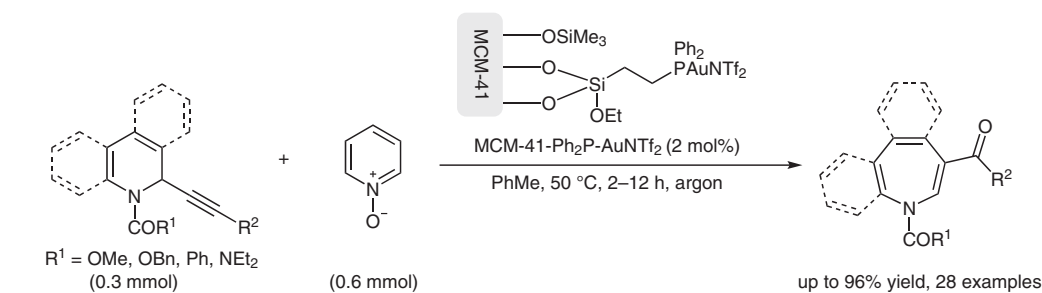


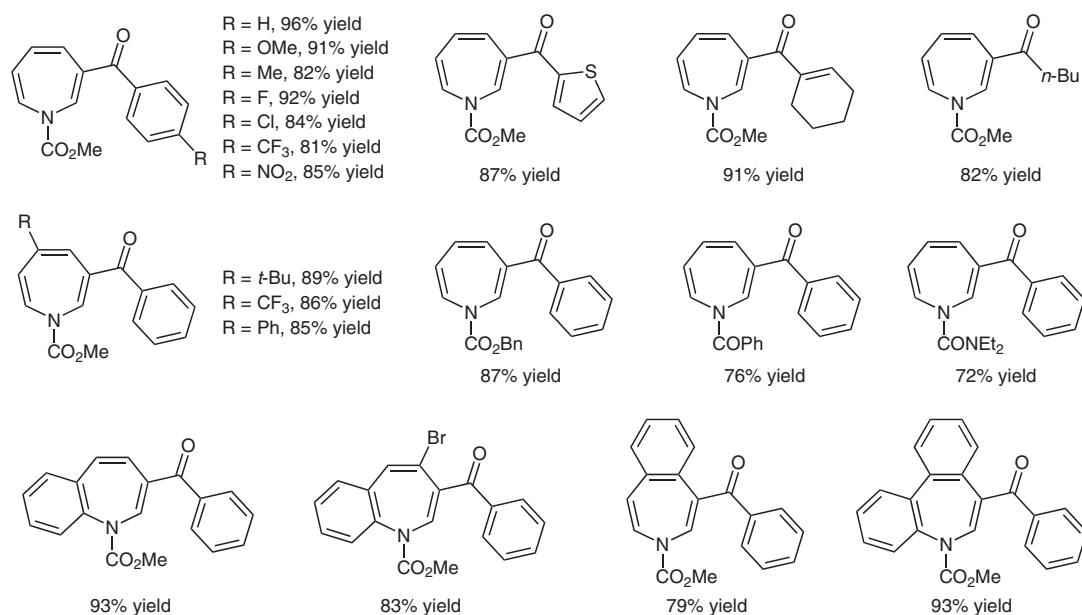
B. NIU, Q. NIE, B. HUANG, M. CAI* (JIANGXI NORMAL UNIVERSITY, NANCHANG, P. R. OF CHINA)

Heterogeneous Gold(I)-Catalyzed Oxidative Ring Expansion of 2-Alkynyl-1,2-Dihydropyridines or -Quinolines Towards Functionalized Azepines or Benzazepines
Adv. Synth. Catal. **2019**, *361*, 4065–4074.

Ring Expansion of 2-Alkynyl-1,2-Dihydropyridines with Pyridine *N*-Oxide on a Silica-Supported Au Complex



Selected examples:



Significance: A gold complex immobilized on a mesoporous silica (MCM-41) bearing diphenylphosphine functional groups (MCM-41-Ph₂P-AuNTf₂) catalyzed the oxidative ring expansion of 2-alkynyl-1,2-dihydropyridines or -quinolines with pyridine *N*-oxide to give the corresponding azepines in ≤96% isolated yield.

Comment: The authors have previously reported the preparation of MCM-41-Ph₂P-AuNTf₂ and its use in the hydroamination of alkynes with anilines (*Adv. Synth. Catal.* **2018**, *360*, 3940). In the oxidative ring expansion of methyl 2-(phenylethynyl)pyridine-1(2*H*)-carboxylate with pyridine *N*-oxide, the catalyst was recovered and reused seven times without significant loss of its catalytic activity (fresh: 96% yield; seventh reuse: 93%).

SYNFACTS Contributors: Yasuhiro Uozumi, Guanshuo Shen
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Category

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azepines
pyridine oxide

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