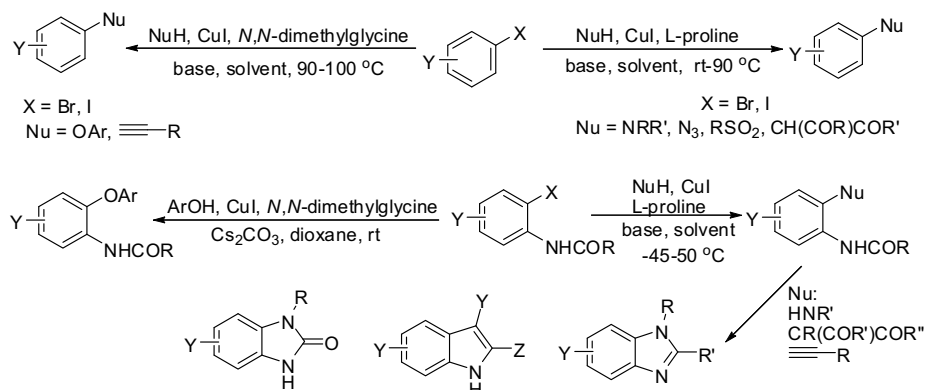


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Ullmann-type coupling reactions between aryl halides and N-containing reagents, phenols and other related nucleophilic agents are a traditional method for preparing corresponding aromatic compounds that are important in pharmaceutical science. However, a significant drawback of these reactions is the requirement of a high reaction temperature, which greatly limited its scope of application. This shortcoming stimulated considerable efforts to develop relatively mild coupling conditions in recent years.¹ The successive examples are highly dependent on the use of special ligands such as *N,N*- or *N,O*-bidentate compounds. In this report we will summarize our efforts on the development of new reaction conditions for Ullmann-type coupling using amino acids as promoters,² describe that there is an accelerating effect caused by an *ortho*-amide group.³ The applications of these coupling reactions in the synthesis of heterocycles likes substituted indoles, 1,2-disubstituted benzimidazoles, N-substituted 1,3-dihydrobenzimidazol-2-ones, 3-acyl oxindoles, 2,3-disubstituted benzofurans, are also reported.⁴



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