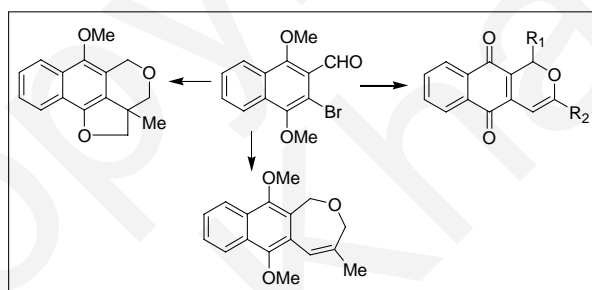


ABSTRACT

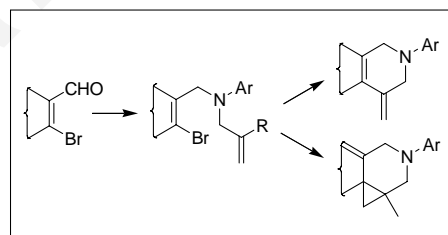
Synthesis of Pyranonaphthoquinones and *N*-Containing Heterocycles by Palladium and Copper Catalyzed Cyclizations

Transition metal catalysis makes possible a great many selective and atom-economical transformations and their applications to organic synthesis are still being actively investigated. Pyranonaphthoquinone, tetrahydro-pyridine, cyclopropane fused octahydro-isoquinoline, benz-imidazo[2,1-*a*]isoquinoline, pyrrole and isoindole moieties are frequently found in many natural products and bioactive molecules. Our focus was centered on the development of new strategies towards the synthesis of these class of compounds based on palladium and copper chemistry.

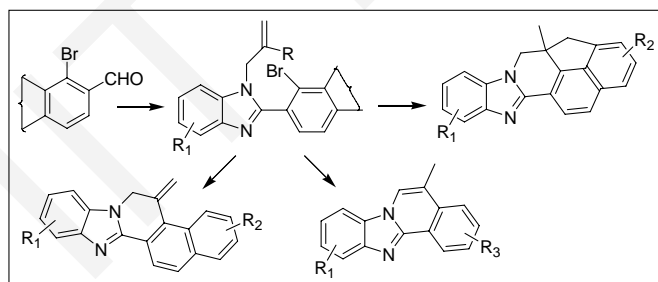
The dissertation entitled “*Synthesis of pyranonaphthoquinones and N-containing heterocycles by palladium and copper catalyzed cyclizations*” has been organized in four chapters. The synthesis of tricyclic pentalongin and its derivatives via palladium(0)-catalyzed cyclization was envisaged in **Chapter 1**. Formation of substituted or cyclopropane fused octahydro-isoquinoline systems and benzimidazo[2,1-*a*]isoquinoline moieties via palladium(0)-catalyzed cyclization has been discussed in **Chapter 2** and **Chapter 3** respectively. In **Chapter 4** we have developed a new route to substituted pyrrole and isoindole derivatives using copper-catalyst.



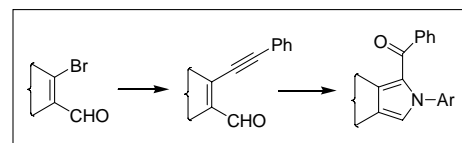
Chapter 1



Chapter 2



Chapter 3



Chapter 4

Keywords: Palladium-catalyst, copper-catalyst, pyranonaphthoquinone, cyclopropane fused octahydro-isoquinoline, benzimidazo[2,1-*a*]isoquinoline, pyrrole, isoindole.